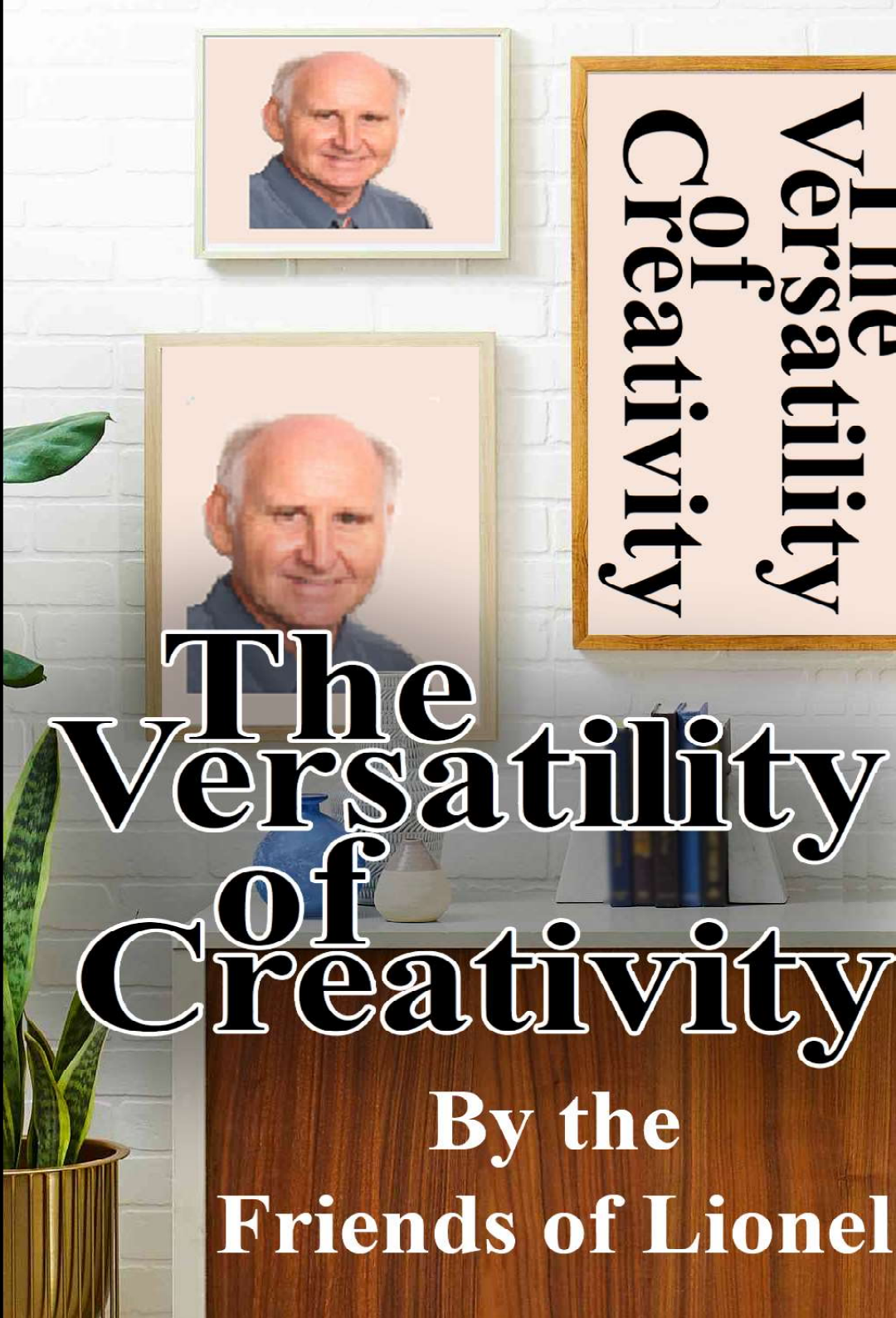
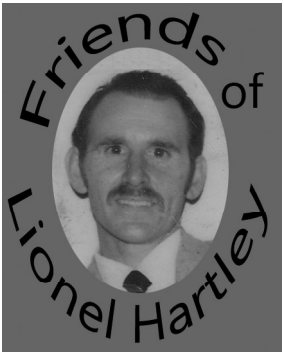


The Versatility of Creativity

By the Friends of Lionel

The Versatility of Creativity



The Versatility of Creativity
By the *Friends of Lionel*
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Compiled and edited by the *Friends of Lionel* with the guidance and assistance of Lionel Hartley
Typeset in Times
Illustrations provided by Lionel Hartley

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Disclaimer: The *Friends of Lionel* remain an anonymous group for several reasons.
Firstly, we were not the first to suggest this initiative (this was originally initiated by W. A. Townend).
Secondly, we do not wish to have to explain why we chose Lionel Hartley over the hundreds of other worthies that receive no recognition, and thirdly, (to adapt one of his expressions) this is not about us, but him.

LRHARTLEY.COM MAILBOX

To: admin@lrhartley.com

From: lionelsfriends@gmail.com

Subject: The Versatility of Creativity

Lionel,

We have finally transferred the copyright for your book *The Versatility of Creativity* by the Friends of Lionel, to you personally.

We have no more copies for sale and, as you requested, the proceeds are being channelled into the charity that you chose.

Thank you again for helping us with the publishing template and for providing extra photographs and some of your drawings to include.

A updated pdf is attached for you to upload to your website now that all printed copies have been sold.

Thank you for all you do.

Regards,

Your friends at the *Friends of Lionel*

https://sites.google.com/view/lionelsfriends

lionelsfriends@gmail.com

https://friendsoflionel.blogspot.com

1 July 2025

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Illustration by Lionel Hartley
(reproduced here with permission)

Introduction

The ***Friends of Lionel*** (Lionel D C Hartley) have put together this book to share some of his creative ideas using things that he has written, composed, made, designed, built, constructed, invented, created or modified for the better.

Thirty or forty years ago, a few of us faculty at Avondale College (Now Avondale University) were at a social gathering and the discussion of marriage came up.

Interestingly, we discovered, during the course of the discussion, that almost all of us had benefitted from marriage counselling with our colleague Dr Hartley who managed a Family-Life Clinic nearby.

The discussion then moved to discuss Professor Hartley himself, and we learned was not just another academic, but that he had been instrumental in a number of initiatives such as fundraising projects, designing and building safe playground equipment at the community pre-school, setting up kiddie-safe playground and weekly playgroup at his home, founding the first ever Morisset Community Markets and then

editing/publishing the Market-Day News, providing innovated and cost-saving solutions when told about mechanical problems at the College Farm, promoting the Church School and Community Carols-by-Candlelight via video medium and ghost-writing research papers for the newly established EG White Research Centre.

So we bandied together to form *The Friends of Lionel* to publicly acknowledge his contribution to society, his church, and his family (immediate and extended).

The membership of our informal group has changed over the years, most of the founding group have passed to their rest, and after thirty or forty years, nothing had been done to further our goal.

Finally, when we heard that Lionel had retired, the three or four of us remaining from the original group were motivated enough to organise ourselves sufficiently to carry out our original aim.

Although frustratingly very reluctant at first, Lionel has generously agreed to share more of himself than we were able to glean from his friends, his various websites or his published writings.

We are grateful that he has been willing to share ’photos, drawings and text to make this volume possible. Your editor decided what goes where.

We tried to extract from him sufficent detail and information regarding each item so a home handyman reader can copy the items for themselves if desired.

As *The Friends of Lionel* is informal, there is no need to join to support our aim, just subscribe to our blog (https://friendsoflionel.blogspot.com) or his intermittant blog (https://hartleyonline.blogspot.com), or visit his website (www.lrhartley.com), read any of his more that one hundred books (all free), listen to his podcasts, watch his videos, share his material through running his seminars (all resources are free from his website or achive.org) or gleaning from his journals or blog for editorials or newsletter snippits/fillers.

This book contains a small random selection from our blog (friendsoflionel.blogspot.com) which features many of Lionel’s skills and talents.

They are in no particular order and were chosen by our team to demonstrate the versatility of his creativity.

About Lionel Hartley

(Information gleaned from various websites as of 2005)

Retired sociologist Lionel Hartley has earned qualifications in Business Administration, Business Law, Electronics, Economics and Accountancy, Graphic Art, IT and an honorary diploma in Dramatic Art. In the 1970s, he graduated as a Community Health Nurse with subsequent postgraduate qualifications in Psychiatric Nursing, Psychopædic Nursing, Nursing Administration and Nursing Nutrition.

He later graduated from the St Andrews Clinic under the late Dr Platts with a Certificate in Sex Therapy and Family Life Counselling. In 1980, he graduated from a Melbourne Theological Seminary with a Diploma of Religion.

In addition to a large number of other qualifications, Hartley later received his PhD in Sociology in 1989 and was conferred the honour of Academy Professor Emeritus in 1991.

He is perhaps best known as the author of over 100 books, co-author, editor, and/or illustrator of over 100 others and the author of scores of periodical articles, pamphlets and multimedia publications.

He spent over three decades as a family life counsellor and health & lifestyle educator, firstly for the New Zealand Department of Health, but mostly in private practice (with an unashamed Christian bias) in New Zealand and Australia.

He authored and presented his first public seminar in 1965. As a practicing Christian he has been preaching in pulpits since 1960 for many different denominations and faith communities.

Although retired from counselling, Hartley is still very involved in campanology, writing, commercial art and public speaking engagements.

His hobby in his younger years was the building of reproduction barrel organs and the transposition of music into paper and electronic organ rolls.

Hartley is married to Rosemary (nee Wells) and they have three grown children plus a growing number of grandchildren.

(Profile originally by Theo B Hawkins [adapted])

Carols by Candlelight Stage

This stage was built by Lionel at Red Range in NSW on the Red Range Market Ground for outdoor events such as the annual Carols by Candelight.

Constructed of hardwood planks and measuring 23 feet by 12 feet it had a tubular steel light-weight proscenium and a galvanised sheet metal backdrop.

The front row seating was a telegraph pole rasied up off the ground and other seating was borrowed stack-a-chairs.

Raised Garden Beds

These three raised garden beds were made from re-cycled hardwood fencing.

The rails form the frames along the outside of the boxes and metal L-shaped brackets are bolted at the corners to give it strength and rigidity.

The top of each box is finished with a long plank

of 1” x 4” timber to form a seat.

Each box is eight feet long and four feet wide. The top of each box is 18 inches above the ground making it possible to comfortably sit (side-saddle) on the edge of the box to attend to the plants.

The palings were cut into 18-inch lengths (with any rotted ends discarded and used as fire-wood), pre-drilled to accept galvanisd nails, and nailed inside the frames.

The boxes were then lined with weed-matting and half-filled with bails of straw and then topped with rich garden soil, fertiliser and compost and finally layered with potting-mix and lawn-clipping mulch.

Two of the beds are covered with an arched shade enclosure, made from the two halves of a 12-foot circular galvanised-steel trampoline frame and covered with shade-cloth.

The third box is covered with a removable metal-tubing cloche lined with wire-netting and also covered with shade-cloth. This keeps animals out and handles at each end make it easy to remove to attend to and harvest the veggie plants within.

A smaller garden bed (4ft x 4ft) is located behind these boxes with a different soil mix specifically for growing rhubarb as it requires partial shade, better drainage and protection from frost.

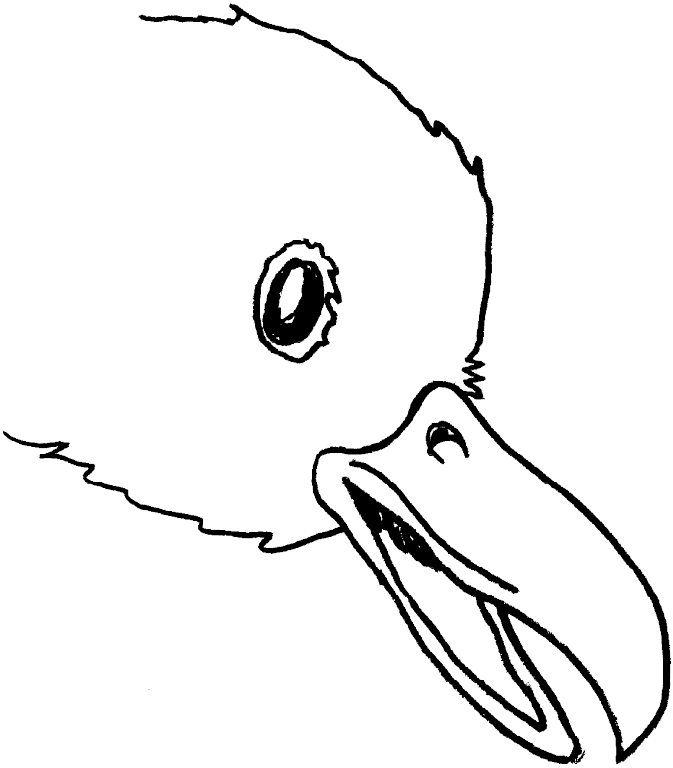


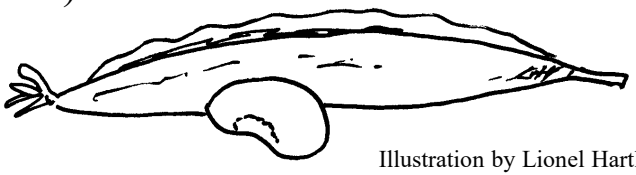
Illustration by Lionel Hartley
(reproduced here with permission)

Refridgerator Drawer Planter Box

This planter box was made from a recycled plastic drawer that was given to Lionel by his son, David.

He painted it inside and out with Liquidstone Terracotta paint, cut drainage holes underneath, filled it with potting soil and put it on one of the many metal plants stands that he had earlier made.

His wife Rosemary used it (in this case, for string-beans).



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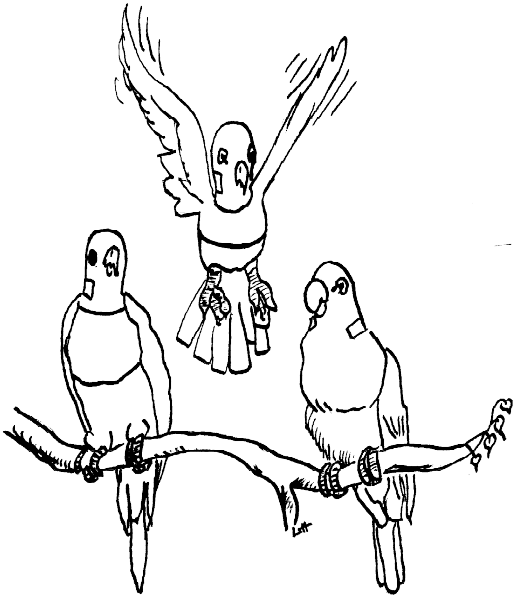

Illustration by Lionel Hartley
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Garden Swing Seats

Here are illustrated two of the several swing seats that Lionel has made over the years.

The white seat on the next page was made from a metal gate, folded in half and held in shape with welded-pipe arm rests. It, too, was suspended with chains from a pipe framework.

The photo shows his daughter who took the cushion off and used it to sit on while swinging the seat back-and-forth.

The LONDON sign was made by Lionel to complement the playground train on page 230

Wooden Garden Bench Seat

This bench seat is made from slats of spruce reinforced with a welded metal frame.

The seat is 18-inches tall and is extra wide for comfort.

Steel runners underneath make it easy to move for lawnmowing, etc

Window Boxes

Lionel made these window boxes out of a length of square guttering.

An extra strip of aluminium was riveted along the back and the end pieces were cut from sheet aluminium, each bent to form a foot underneath and riveted in place. Small tallowwood (Australian hardwood) wedges were cut to keep the window box level on the sloping windowsill and provide sufficient friction to prevent it from sliding off.

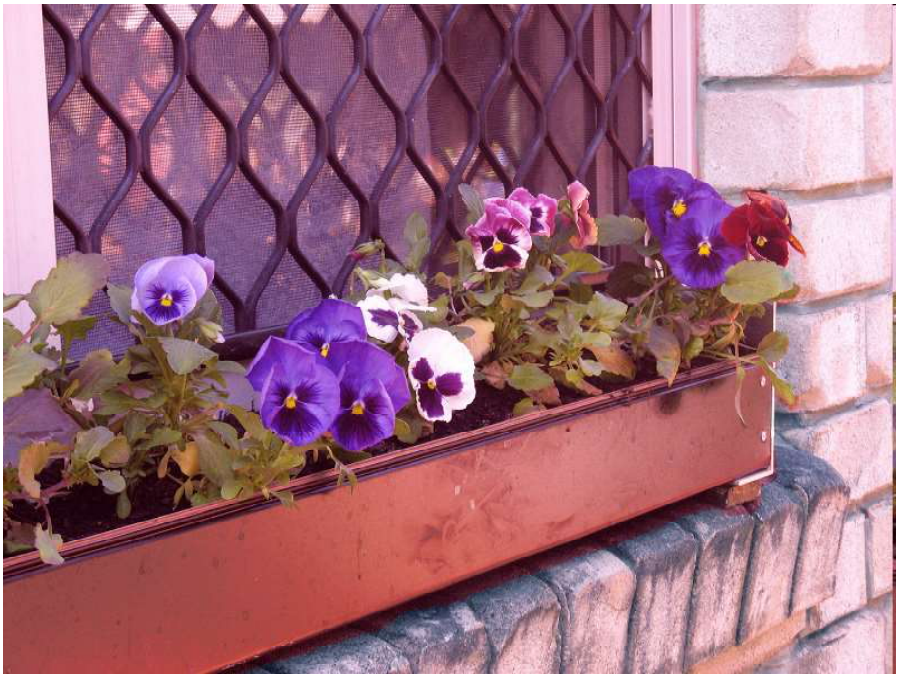


Illustration by Lionel Hartley
(reproduced here with permission)

Streetside Plant Stand

As a fundraiser for the charity ADRA (www.adra.org.au), Lionel's wife Rosemary propagated plants for selling, Lionel made this metal two-tier display stand with a sign and built-in cash collection/donations box.

Powerpole/Tree-pruning ladder

For the first powerpole ladder that Lionel made, he simply replaced the top rung of a tall ready-made wooden extension ladder with a length of loose chain bolted and strung between the uprights.

This worked well, and he used it for installing and servicing light-fittings on powerpoles at a campground where he was a volunteer caretaker, however he needed a smaller one for tree pruning and for painting fence poles, etc., so he built this one from

scratch and put a flat board on one side for using against a wall and an M-shaped mild-steel bracket bolted on the other side to use the ladder (the other way around) for post or pole use or for tree pruning, etc.

The right-hand photo on the previous page shows it leaning securely against the corner of a narrow brick pillar, something not safely possible with a conventional ladder.

The six rungs were made by hand with a spoke-shave using straight-grained Tasmanian oak and the two uprights were cut from a single slab of recycled Victorian ash.

Long Reach Spray-Can Tool

This out-of-reach or high spraying tool allows spraying with a paint-can, insect spray, surface spray, cleaning solution, etc above head height.

It is super-easy to use, just place the spray can in the container at the end of the pole, align the attachment at the end to the spray-can nozzle, lift to desired position and pull the string.

It consists of a fruit-tin fastened to a long aluminium pole with a metal hinged bracket and pull-cord to operate the spray can at a distance.

Ideal for insect spraying of roof eaves or touching up paint on roof guttering or soffit.

Twelve-volt Jewellery Sander

Lionel was asked by a friend to make him a miniature electric sander for shaping and smoothing small items of homemade jewellery.

The jewellery sander in these photos was made from a recycled fan from a computer, mounted on a block of pine with a plastic box housing a socket to receive 12 volts DC from a conventional plug-pack.

A plastic disk cemented to the fan blades has

been covered with a disk of fine sandpaper.

(Lionel said that this idea was not original with him.)

The fan blade underneath was left intact as the fan helps to suck away from the surface the fine particles of waste material that sanding inevitably produces.

Illustration by Lionel Hartley
(reproduced here with permission)

Webbing Stretchers (Upholstery Tools)

Lionel made these wooden webbing stretchers (two different designs) so that he could re-upholster some old chairs as a courteous gesture for a friend.

They proved invaluable for the task, as it involved stretching webbing over springs, and the time taken to make these tools was not wasted.

The webbing stretcher in the middle of the 'photo has padding at one end and a row of brass spikes at the other.

Upholsterer's Spring Compressor

Lionel made this adjustable chair spring compressor of his own design so that he could re-upholster some old chairs for a friend.

It consists of a wooden base (to protect the chair

seat), a hinged metal frame, a threaded rod with a handle on one end and a swivelling wooden disk on the other.

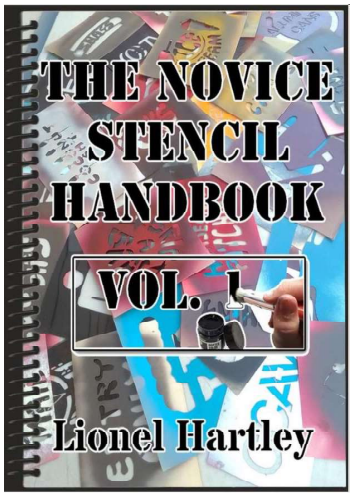
One side of the frame hinges out of the way to put the chair underneath the disk.

The photo on the next page of the under-side shows that there is a wide groove under the disk to allow the webbing to be stretched while the springs are compressed.

Hand-cut Painting Stencils

Over the years Lionel has made hundreds of these hand-cut stencils for signage and for decorating or labelling items that he has made.

In 1987 he had a lie-flat book published for beginner stencillers (The Novice Stencil Handbook, Volume 1).

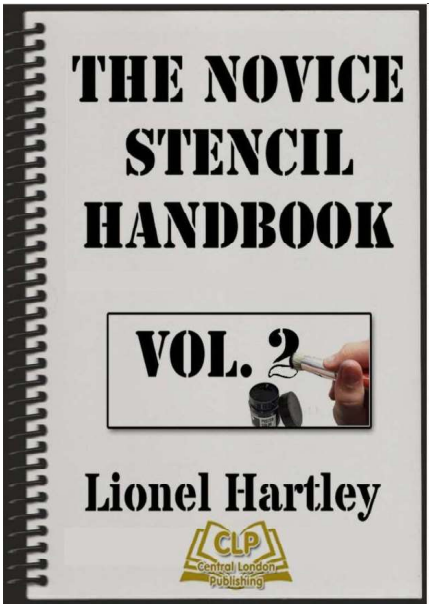


It contains of some 370 of his individually hand-drawn stencils including alphabet characters and numbers, animals, objects, places-of-interest and signs.

His book is available for FREE download from his website at **www.lrhartley.com** or direct download from **https://archive.org/details/stencils-vol1**. Permission is granted to use the illustrations in the book for personal use.

This was followed in 1989 by Volume 2 which contains 288 individual hand-drawn stencils including alphabet characters and numbers, animals, objects, seasonal graphics and signs.

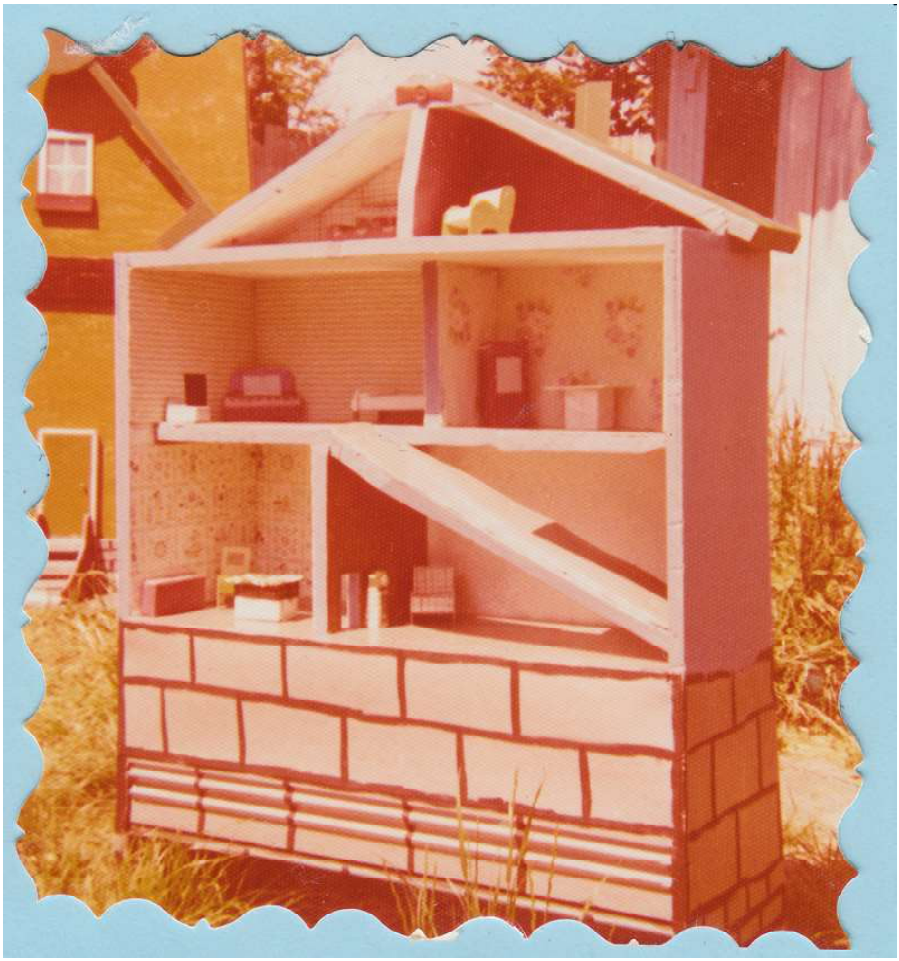
https://archive.org/details/stencils-vol2



The selections in book two were based on reader requests following the publishing of *The Novice Stencil Handbook, Volume 1*, and all have been tested and successfully used for stencilling with craft paper and spray-paint or a stencilling brush and poster-paint

Ada's Dolls' House

This dolls' house, one of several that Lionel has made over the years, was made for the infant children of his sister Ada.



It was made of solid timber and stood 5-feet tall.

All the doll's furniture was hand crafted and a hidden compartment at the bottom stored the furniture and dolls when the Dolls' House was not in use.

The interior walls were lined with wallpaper from a traveller's sample book.

The floors were covered with linoleum off-cuts.

Adjustable Power-tool Mitre Table

An adjustable power-tool mitre table for circular saw, jigsaw or router, etc., designed and built from scratch by Lionel.

All metal construction including the tabletop for magnetic guides. Free-standing, includes double safety-circuit power socket. Light-weight easily-removable metal storm cover for use outdoors.

Mitre guide is adjustable from 0 to 50 degrees and can be removed entirely for cutting flat sheets that

need no guide.

Pivot holes for cutting circular disks up to 30 inches (76cm) wide. Saw/router guide is adjustable width-wise for different sized power tools. Saw/router guide extends in front of the table to allow for larger sheets of raw materials and to start the tool before touching the item to be cut. It has rounded edge on the saw/router guide to protect user from injury. There is also an open slot below the saw/router guide for deeper cuts below table height.

ozito

The next photo shows the measurements.

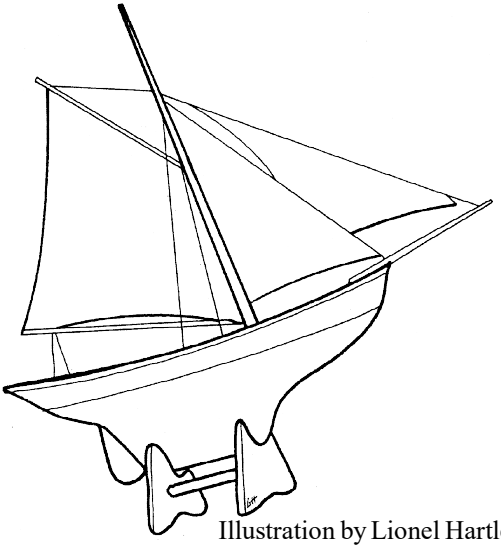


Illustration by Lionel Hartley
(reproduced here with permission)

Angle Grinder Cutting Bench

This tall chest-height Angle Grinder Cutting Bench with a built-in cover to use outdoors, even in the rain, is fully constructed out of steel with extra powerpoints on the front, an electric light, storage holders for cutting disks and safety gear, and uses a commercially made Angle Grinder and holder.

There is a shelf to go below to hold a removable bin for off-cuts etc (bin not shown in the photo)

Artists' Painting Table

This sloping-front painting table was made by Lionel for his wife Rosemary.

It has a hinged lid with two shelves for storage underneath and an aluminium beading along the front edge to keep the artwork in place.

The frame is welded steel and the shelves and top of varnished laminated plywood.

It also has a removable over-head electric light.

Bench-mounted Wire Brush

Lionel was given a broken angle grinder. The casing was cracked and it needed new carbon brushes.

So, after getting it going again, he mounted it on a stand made from two heavy brackets that were

recycled from an old garage roller door, added a wire brush and a switch on the side and this is the result.

A removable perspex shield protects the user and an adjustable shelf steadies the item being brushed.

Noisy, but works great at removing rust from tools etc.

Illustration by Lionel Hartley
(reproduced here with permission)

Bench Sander from an old Pedestal Fan

Lionel was given an old broken pedestal fan - the motor still worked but the blades were broken and it was missing the safety guard.

Being reticent to throw it in the bin, he converted it into a compact bench sander.

Although not as powerful as a commercial disk sander, using a very coarse sanding disc compensates for the lack of power.

This bench sander utilised the original three-speed controller and is ideal for shaping and/or sanding small projects.

Off | 1 | 2 | 3 |

Off | 1 | 2 | 3 |

Bench Vice from an Extendable Clamp

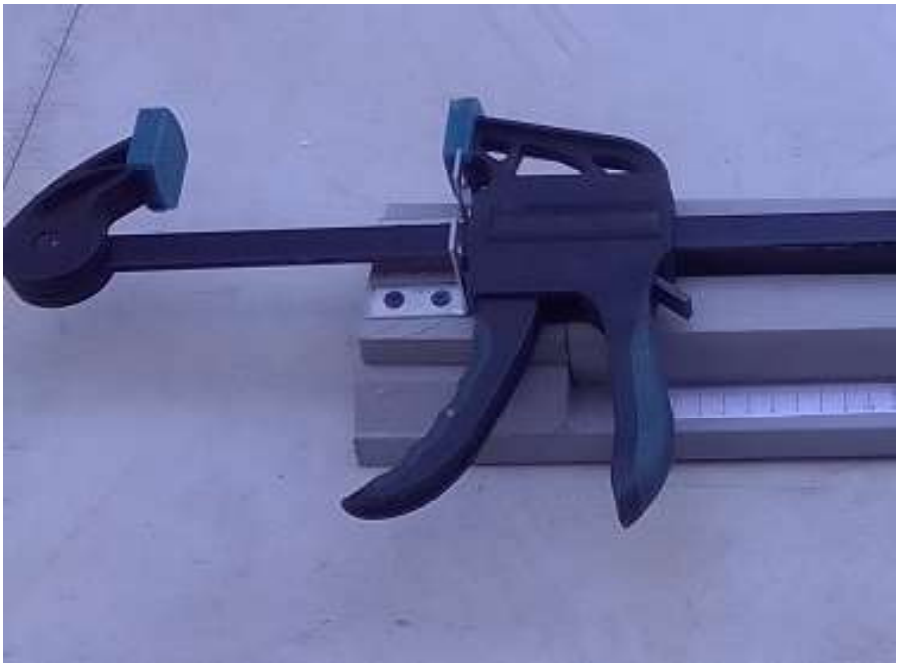
Imagine a wood vice that extends to at least 12 inches and is super quick and easy to use?

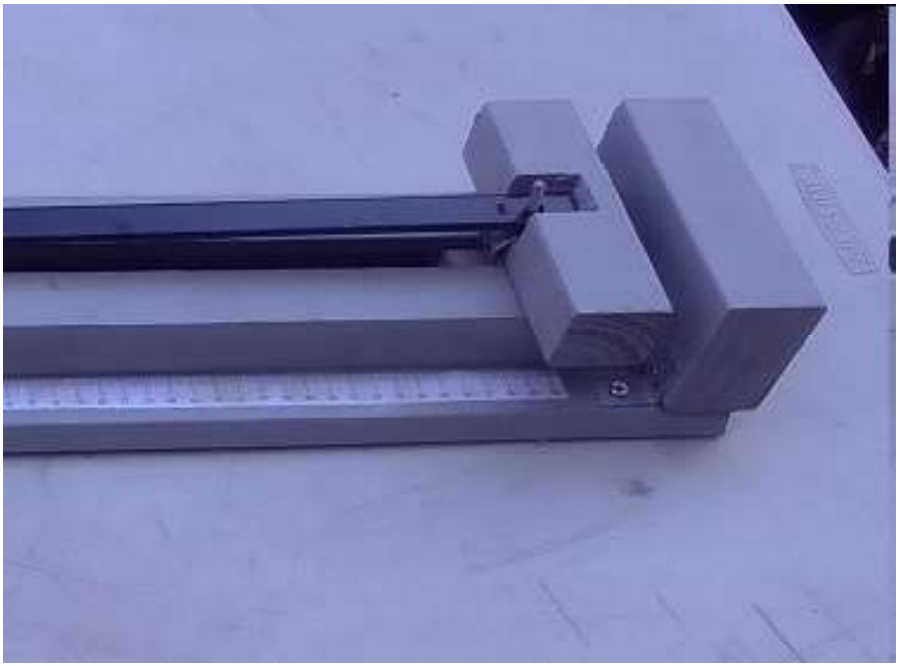
This vice uses a ordinary adjustable clamp with no modification to the clamp necessary.

The holder is made from recycled timber with a wooden T-track the full length to allow the movable jaw to slide easily back and forth.

The track has been lubricated with silicone and the clamp is simply lowered into the fittings and it is ready for use.

And if, after use, the clamp is lifted off, it is then readily usable as a clamp once again.





Blade-Drill Sharpening Jig

Blade-drills are easily sharpened. It is simply a matter of filing a 10-degree bevel on the left-hand side of each face.

To make this more accurate, this jig holds the blunt drill-bit in place, the jig is placed in the bench vice and by following the angle of the tapered sides with a flat file, the user can accurately reproduce the optimum cutting angle.

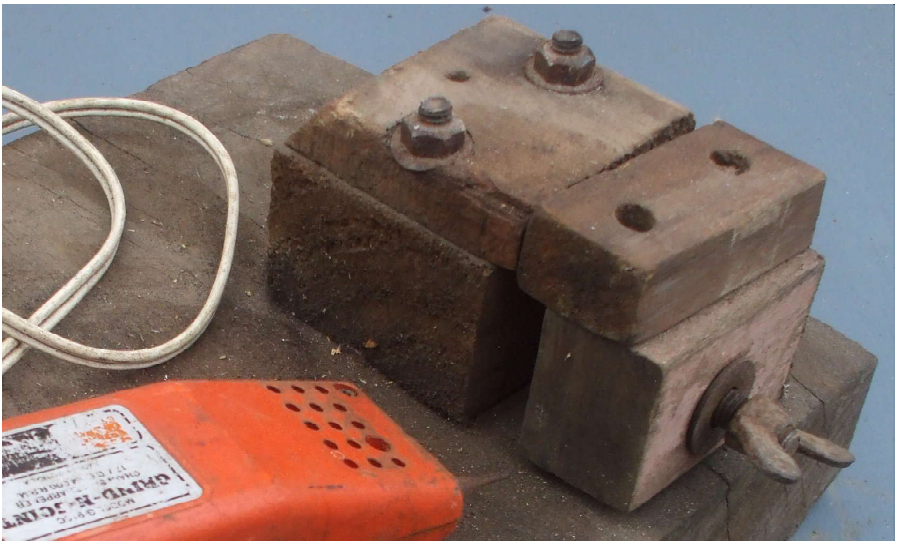
He says it was simply made: an eight-inch offcut of 3” x 2” cut in two at precisely 10 degrees, grooved along the length and the two halves fastened together with two carriage bolts, washers and wingnuts on alternate sides.

The whole assembly is held in an ordinary bench vice while a flat blade is used to sharpen the drill bit.

Chain-saw Sharpening Vice

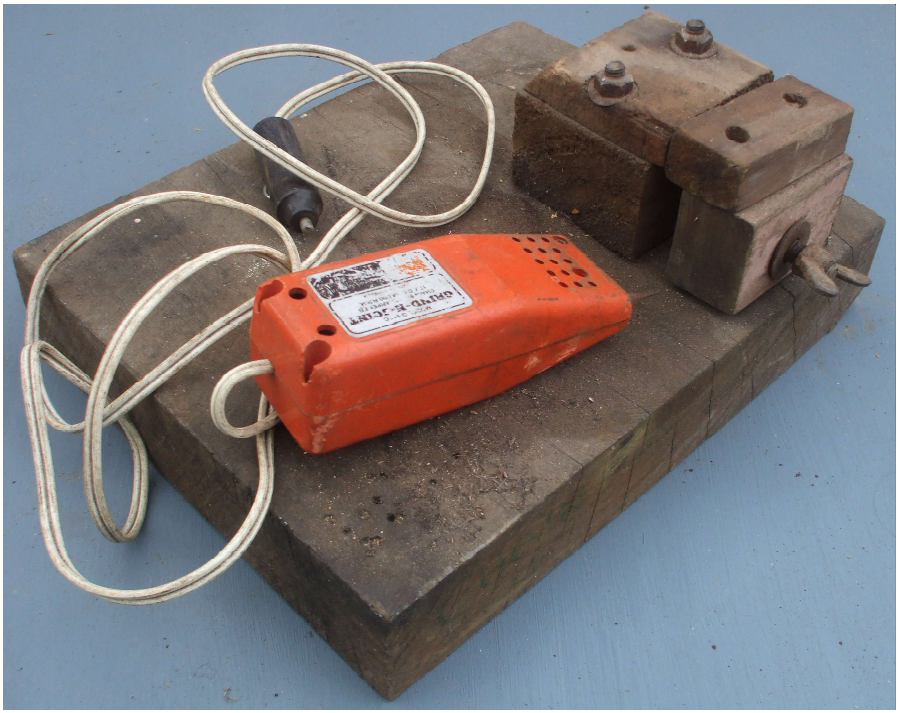
This very well-used Chain-saw Sharpening Vice was made from an 18-inch section cut from an old hardwood railway (railroad) sleeper.

Other offcuts were assembled to form a clamp to hold the chainsaw blade in place allowing the chain to be rotated by hand to sharpen each tooth in turn. (Actually he would sharpen alternate teeth from one angle and then go around again to sharpen the teeth that he missed, filing from the other angle.)



The photos show a 12v electric sharpener that he never got around to using as he preferred sharpening

his chainsaw by hand using a taperless rat-tail file.



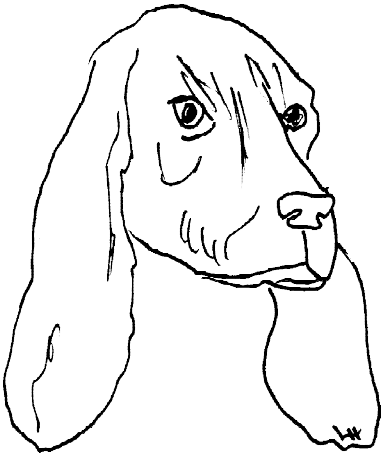


Illustration by Lionel Hartley
(reproduced here with permission)

Child Safety Gates

These child safety gates were designed to fit his rental property doorways with the padded fittings on the ends made to fit into the trim on the door jambs.

Lionel made several of these from re-cycled playpens and they were adjustable to fit any door between 2 and 3 feet wide.

They were very lightweight but also very secure once fastened.

He also made one with slightly different fittings for use at the top of the stairs.

As you can see by the worn paintwork, they got a lot of use.

Clamp-on Infant's Seat

This infant's seat was made to clamp onto a dining-room table or outdoor picnic table as a portable substitute for a highchair.

All three of Lionel's children used it at one-time-or-other during their infancy.

It was made using some cast aluminium clamps off an old laundry clothes-wringer, some aluminium tubing and seat initially made from an old refrigerator shelf folded in half.

It was later modified to support a canvas seat instead, so it could fold flat for travelling.

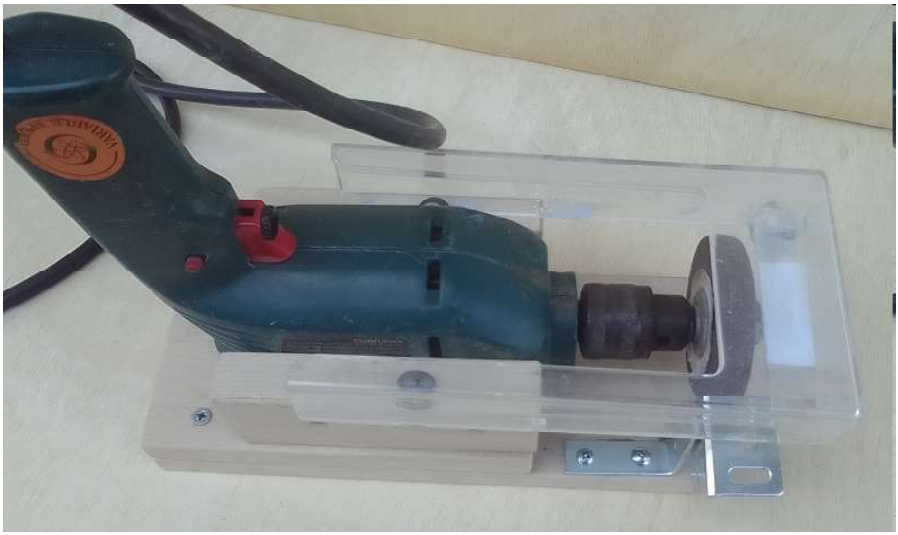
Compact Bench-Grinder Stand

This compact bench-grinder uses a recycled variable-speed electric drill and a 3 inch grinding wheel.

The unique design of the stand using a few offcuts of white Norwegian spruce looks weird without the drill in place, but it consists of a frame to hold the drill, a perspex safety guard, and an adjustable rest for the workpiece

The round disk at the back corner is for a G-clamp to fasten it to a benchtop.

The removable erspex safety guard was made from a DL-size display stand.

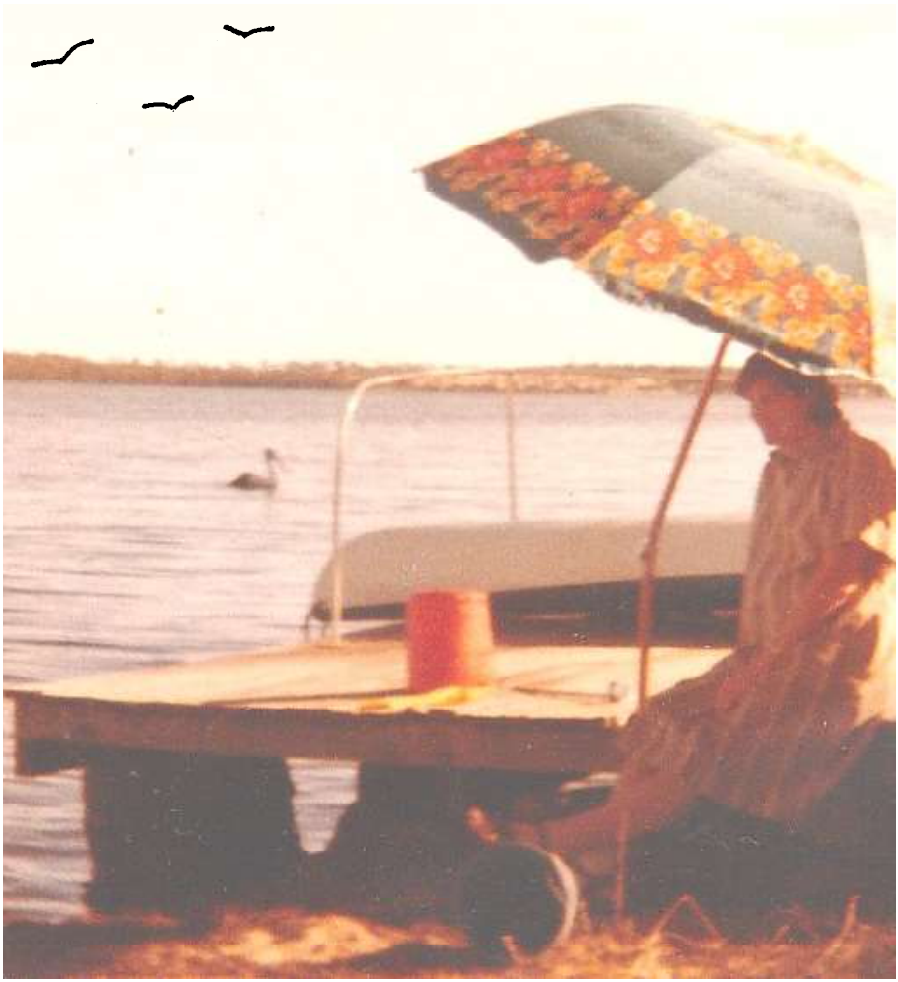


Boat and fishing Jetty at Eraring

The original Jetty at Eraring on Lake Macquarie (NSW) was rotted and the timber piles supporting it were dangerously decayed.

So Lionel sought Council permission to resotre it by building this new 15-foot by 7-foot jetty with treated decking timber and mounted it on four 44-gallon (200-litre) drums filled with cement.

After painting it with clear marine decking varnish added a safety rail and two galvanised boat mooring rings.



Generator Earthing Spike

"A brass spike with a handle for insertion into the soil (and for removal), fastened to long earthing wire with an alligator clip on the end."

This is how Lionel described this safety device made from a length of brass rod, tapered at one end and riveted to a t-shaped handle at the other. A wire and alligator clip were added and it was then ready for use on his portable generator to prevent electric shock when working outdoors in damp conditions.

From Barn to Cottage

This redwood vertical-slab barn on the street frontage of the Hartley property at Red Range was quite an eye-sore.

By installing two windows at the front and another at the side, re-lining the floor, installing a fireplace with a slow-combustion stove, adding a water-tank and plumbing, installing a kitchen bench, etc., using heritage colours and several coats of paint, Lionel converted this 110-year-old barn into a cozy cottage.

Before

After

The cottage was also converted for a short time as a shop while the Red Range (general) Store was undergoing a heritage restoration and then converted back to a cottage when Lionel had completed the store restoration.

The cottage can still been seen on the main road through the village of Red Range in New South Wales.

Red Range Store Heritage Reconstruction

These photos show the heritage reconstruction of the 1897 Red Range (general) Store that had been converted into a triple garage.

The reconstruction involved replacing the metal doors with a shopfront with windows and an inset door, a verandah, an upstairs room, a hitching post, sign-writing, outdoor furniture, interior shop fittings, counter and refrigeration.

RED RANGE STORE

(Yes, that's Lionel on the ladder)

RED RANGE STORE

Souvenir
Postcard
RED RANGE STORE
RED RANGE STORE
Red Range Store
Red RangeNSW
1897 - 1997

Clown Car

Petkof the Clown * squeezed into this tiny clown car at a staged event on Brighton Beach (New Zealand) in the late 1960s.

*Lionel's book on *Petkof the Clown* may be downloaded free from **https://archive.org/details/petkoftheclown**

Lionel modified it from a 1930s sheet metal pedal car and anything else he could find that would add lunacy and humour to its appearance.

One wheel was originally from a baby's pram, another was a square lid from a discarded metal toolbox, another was made with wooden spokes and a piece of garden hose for a tyre and the fourth was a saucepan lid.

These spring-mounted wheels dramatically fell off at the shift of a lever but the clown car still kept moving because of another small set of proper wheels hidden underneath.

An opening under the floor allowed the "driver" to move it along with his or her feet.

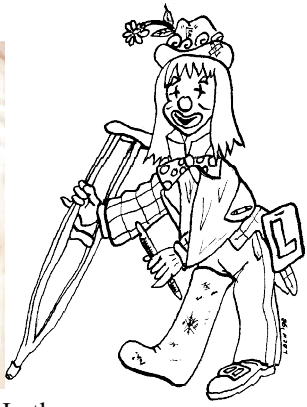
The headlight was hinged with a wire connecting it to the steering wheel so it nodded when the wheel was moved.

It had a very loud claxon (klaxon) horn and a brass bell hidden under the bonnet.

Pressing the foot against a water-filled rubber hotwater-bottle hidden underneath, cause a spray of

water to come out of the radiator cap.

The photo shows one of Lionel's nieces taking it for a test-drive through some long grass.



Illustrations by Lionel Hartley
(reproduced here with permission)

Cross-Stitch Templates

These Cross Stitch Templates (in four volumes) each have a selection of hand-drawn printable counted cross-stitch charts illustrated by Lionel. These are freely downloadable from his website and archive.org (See links below)

Volume 1 (Chart numbers 1-20) Fruits & vegetables, Birds & animals, A Cottage, Toys, People (including children), Objects, etc.

Volume 2 (Chart numbers 21-40) People (including a clown), Objects, Animals, Religious, Flowers, etc.

Volume 3 (Chart numbers 41-60) Alphabets and Numbers

Volume 4 - Since the first three of the series was published in 1989, Lionel was inundated with requests to have images reversed so that, for example, the picture of the horse is facing the other way. Volume 4 consists of reverse images of the ten most requested illustrations.

https://archive.org/details/cross-stitch1
https://archive.org/details/cross-stitch2
https://archive.org/details/cross-stitch3
https://archive.org/details/cross-stitch4

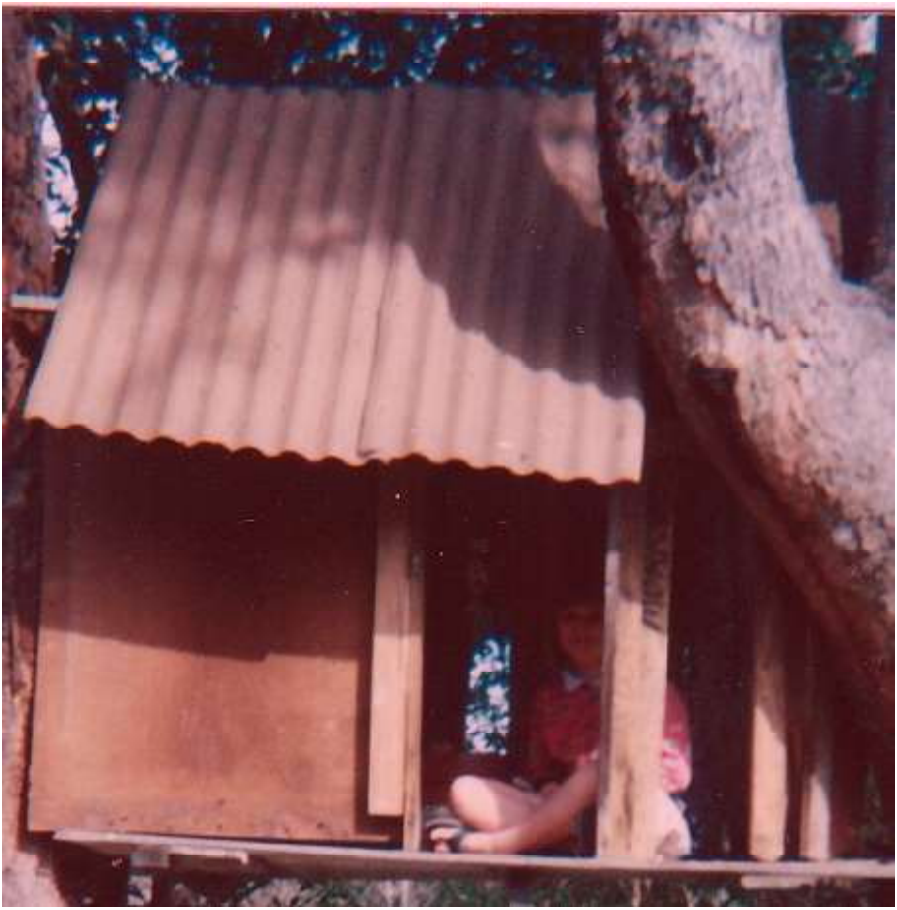
David's Cubby House (Tree House)

What kid doesn't dream of a tree house when they are small?

Lionel's then-infant son David was no exception and the gap between these two trees with a picnic table beneath leant themselves to fulfilling his wishes.

With an aluminium ladder up the side to a generous sized door, windows side, front and back, with couple of folded sheets of corrugated iron as a roof, some Masonite walls and an old trestle-table top as a floor, David's dream became a reality.

Furthermore, to his credit, he was happy to share it with his siblings (one of whom is seen in this photo).



Jacob's Cubby House

Bespoke Custom-made Cubby House designed and built by Lionel for his then-infant grandson Jacob.

Solid construction, Decking-timber Verandah, Marine-ply walls, Arched Windows. Metal Roof with ABS Guttering, Chalk-board, Reinforced soft-edge corners.

Made to fit on a box-trailer for transportation.

Size: 6ft 6in long (200) x 5ft tall (153).
Roof 6ft 6in long (200) x 5ft 3in wide (160).
Base 6ft 6in long (200) x 3ft 6in wide (105).

A video of stills
showing the construction process is online at
https://archive.org/details/jacob-cubbyhouse

Marine-ply walls

Several coats of undercoat.

Only the shadow of weatherboards spray painted on.

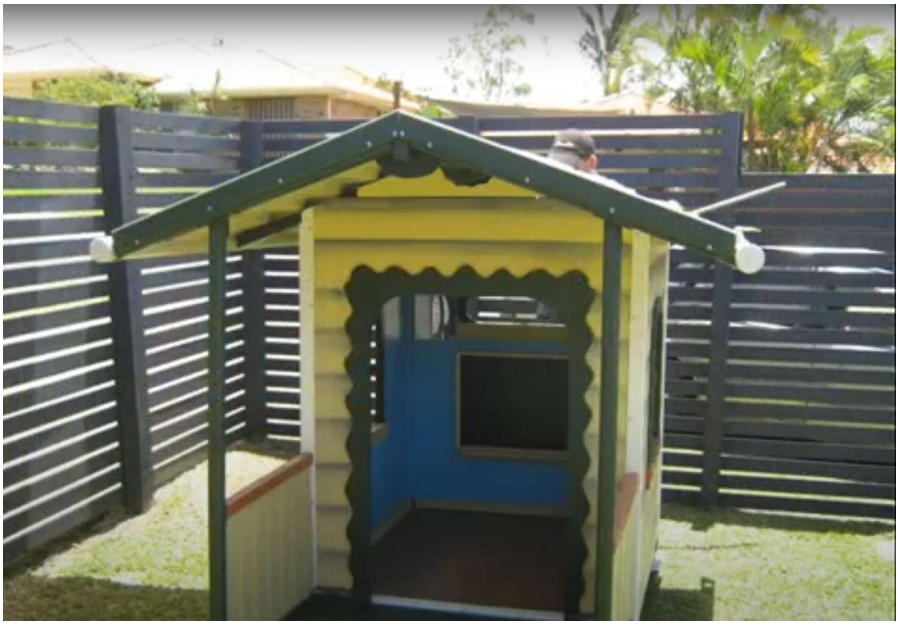
Window frames & sills painted

Cypress pine painted verandah palings

Temporary assembly in garage

Re-assembly in situ

Temporary bracing to put roof on



Verandah & corner trim re-assembled

Grandchildren checking out the new cubbyhouse

Windmill Garden Ornaments

These reproduction windmills stood seven feet tall from the base to the apex of the roof.

Lionel made these two identical windmills this out of plywood tacked onto a timber framework.

They were originally made as stage props at two separate venues and, when it was no longer needed, one found its way into his parent's lawn as a garden ornament and the other to Lionel's back yard.

And no, the (green) vanes on one of them does not rotate any more, as the mechanism that rotated that particular one on stage (A gobo lighting rotor) was not suitable for outdoor use and it was returned after being borrowed for the stage production.

The other had a 12-volt motor to slowly turn the blades, the mechanism was designed and constructed by Lionel from a modified Lucas windscreen wiper-blade motor recycled from a Ford truck .

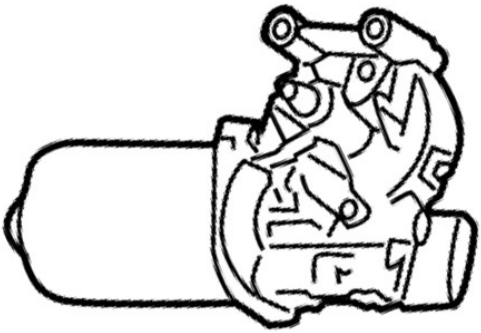


Illustration by Lionel Hartley
(reproduced here with permission)

Wishing Well Garden Ornament

This garden ornament was made from a discarded 250-gallon water tank and a wooden framework. The roller was a four-foot section of telegraph pole with a

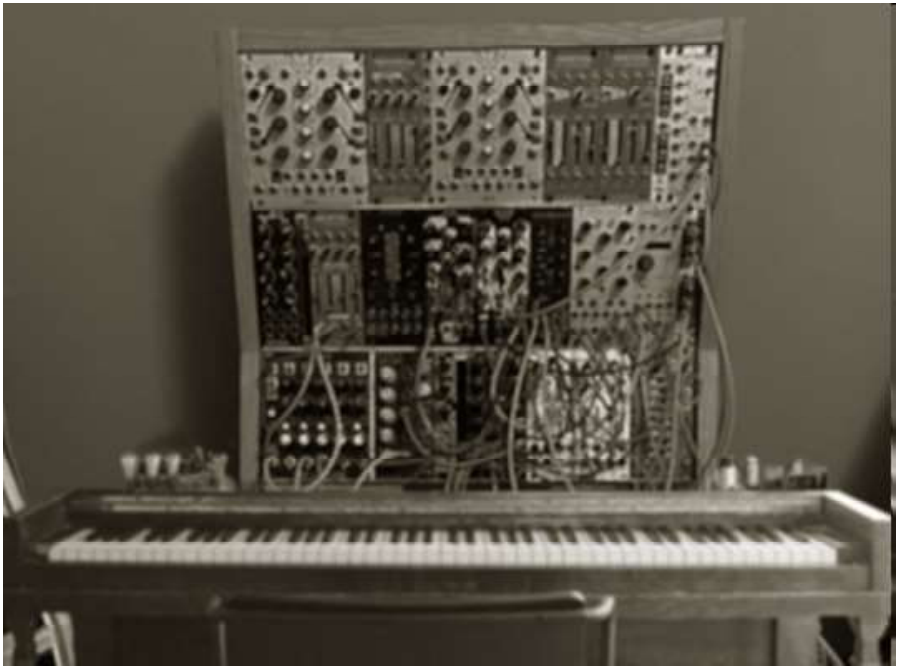
section of pipe wedged in a hole in each end so the roller could rotate.

The buckets were made from re-cycled oak with slats cut and re-shaped from a broken wine barrel and the bands were strips of brass from a discarded electrical fitting. The roof was made from from painted 5-ply marine ply

These were the first of five such wishing wells built by Lionel over the years.

Analog Synthesiser

Lionel built this valve-operated synthesiser using parts generously donated by the electronics store "Elequip" in Christchurch in the 1970s. Recycled parts included components from an old telephone exchange, a radio station, a 'plane cockpit and the keyboard from an old piano.



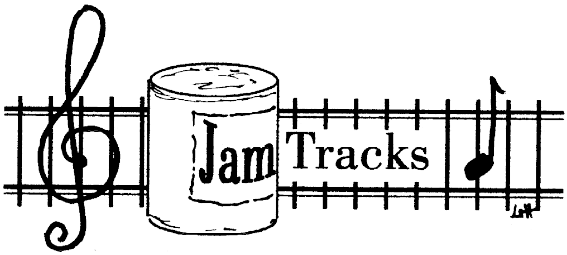
The piano frame, strings and tracking mechanism were all replaced with home-made switches (one for each key) made from strips of brass.

The synthesiser was made to create the sound track for a stage production in the Christchurch Civic Centre.

Because it used 251 radio valves, it required several cooling fans and they made too much noise to enjoy the sound directly and so he wired this to an 8-track Akai tape recorder, recorded the sound and then played it back without the synthesiser.

He mastered around forty diverse continuous-loop backing musicians' tracks using this home-made synthesiser and licenced them for public performance.

The synthesiser was later donated to a Ferrymead Science exhibit and the 8-track cartridges lay in storage for a decade or more.



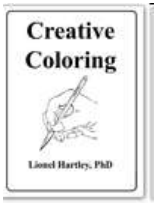
In the late 1980s, the backing tracks were re-mastered and distributed on compact disk and cassette by Red Range Radio who gave them more modern and

descriptive names such as: Ballad, Blues, Brass Band, Cool Icebeat, 2-step, Country, Dancebeat, Four-by-four, Disco, Formal Ace Beat, Four-square, Funk, Fusion, High-hat, Hip-hop, Jazz, Latin (three different versions), March, Metal, Motown, New Age, Pop, Rap, Reggae, Rio Carnivale (Mardi Gras), Rock (four different versions), Samba, Shuffle, Snare, Soul, Space Rock, Swing, Roll-back, Techno, Top Drum.

Samples of these 1970s recordings may be downloaded from the Red Range Radio website.

Colouring books with Original Artwork

These colouring books each contain original artwork by Lionel.



(Also in other languages)

Creative Colouring 152pp,
freely available for download from
https://archive.org/details/creativecolouring

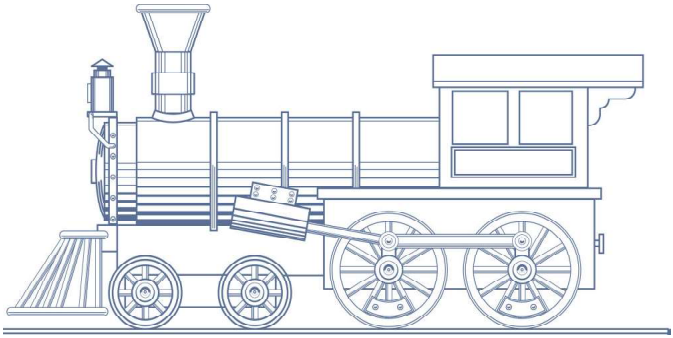
The Drawing Pin and Other Wordpix
(A book for children and their parents. Pictures to colour, pictures to make you smile
& pictures to talk about together.)
Freely available for download from
https://archive.org/details/drawingpin

Fairground Train

Unfinished project. Take a British Leyland Mini motorcar, remove the doors and bonnet and build a metal surround to resemble a steam train.

Make three colourful closed-in 4-wheeled trailers resembling carriages to be pulled behind.

This is what Lionel was doing before a shed fire at Eraring, NSW destroyed the lot.



Drill Press from Scrap Metal

This drill press was made from pieces of scrap metal shaped and bolted onto two 10-inch off-cuts of aluminium decking and fitted with a coil spring and a pipe handle.

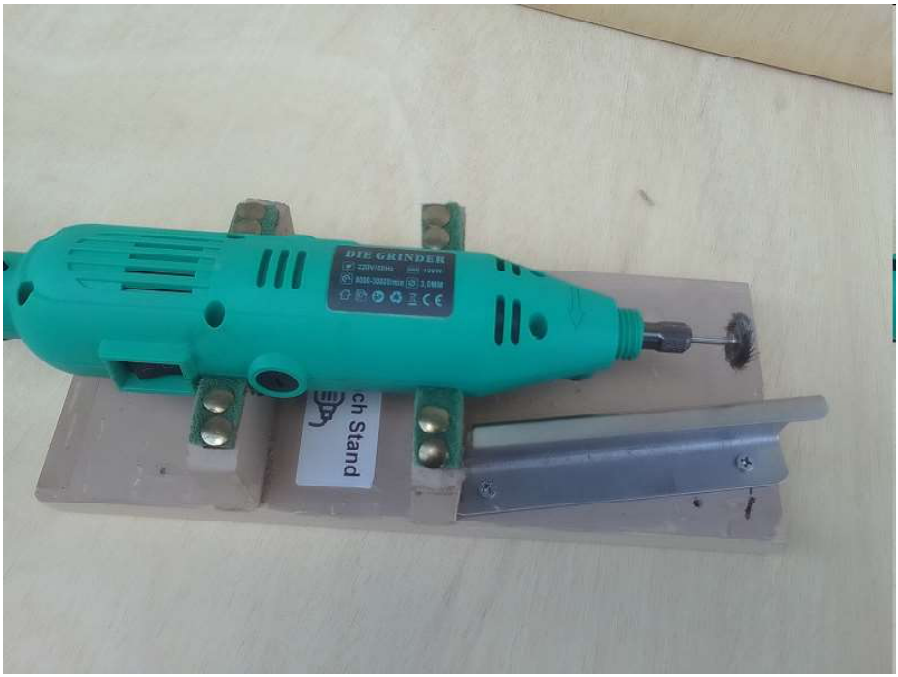
It has a steel collar that holds a standard electric drill.

Dremel Bench Stand

This Bench Stand enables a Dremel or similar tool to be used like a miniature bench grinder or jeweller's lathe.

The wooden supports are lined with thick felt to snugly hold the Dremel without the need to clamp it in any other way, also enabling it to be removed easily.

An adjustable metal guide steadies the workpiece while the stand is in use.



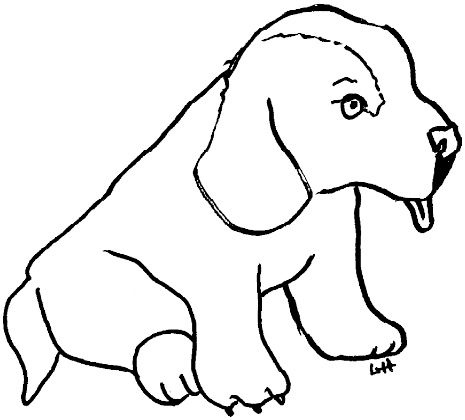
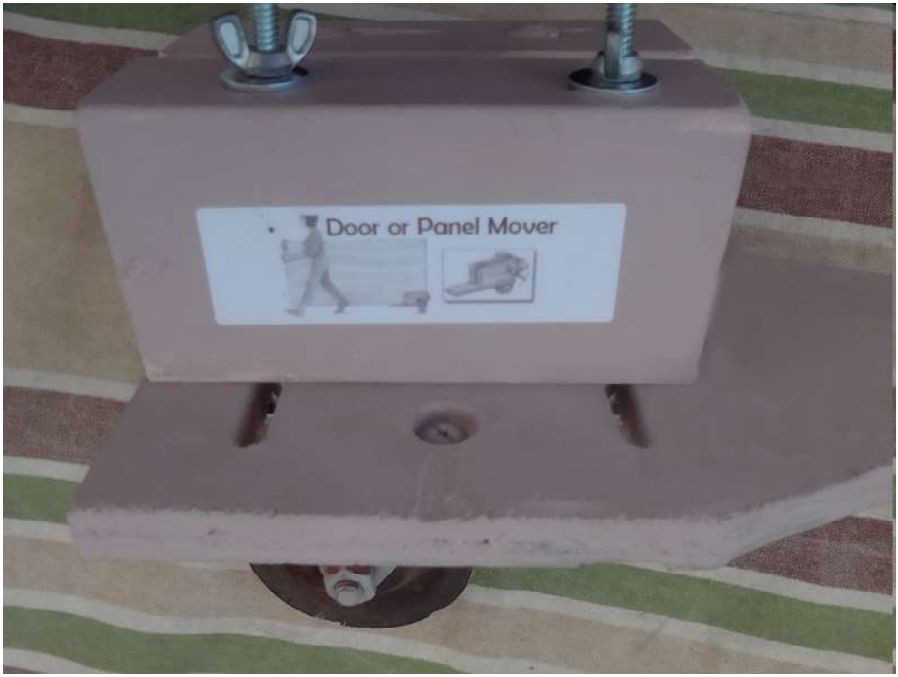


Illustration by Lionel Hartley
(reproduced here with permission)

Door & Paneling Mover (Dolly)

This dolly (dollie or dolley) has a single large heavy-weight solid-rubber swivel wheel and an adjustable clamp for moving doors, panelling sheets, large mirrors, bundles of cardbard boxes, long folding tables or trestle-tabletops.



The clamp consists of one block of wood securely bolted to the base and the other adjustable with slots in the base and two carriage bolts with washers and wingnuts.

A screw adjustment on the underside means that the swivel action of the wheel can be locked in place to prevent it wandering sideways on sloping surfaces.

It has a hole for a rope so it can be pulled along by a second person if required.

Extra Large Paper Trimmer

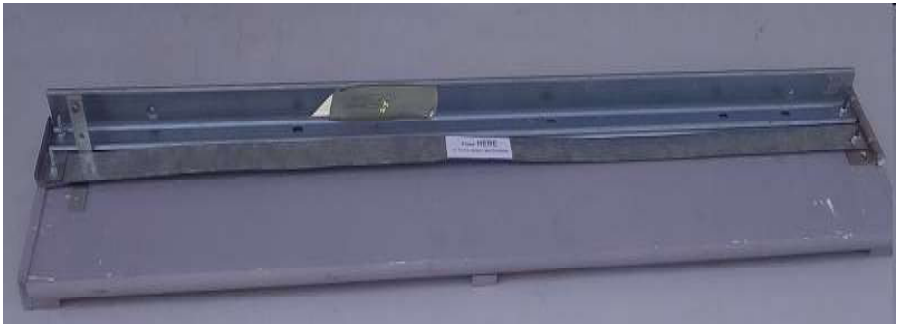
For picture framing, poster or photo trimming, bookbinding, giant cardmaking, fabric, linoleum, upholstery, craftwork and hobbies.

Self-healing silicone recessed cutting surface the full length of the trimmer.

Cuts paper or cardboard up to one metre wide.

Has a modified Stanley® Knife with a blade storage attachment.

Heavy-weight hinged metal guide rail with a spring band for holding the workpiece.



Extra Large Calipers

Vernier and Sextant Calipers

These extra large calipers were made by Lionel because the commercial ones were too small for a project that he was working on.

The Vernier caliper is two foot long (61cm) with a 16 inch throat (40cm).

The sextant caliper is 18 inches long (46cm) with a comfortable span of 30 inches (76cm).

Flush-cut Hacksaw

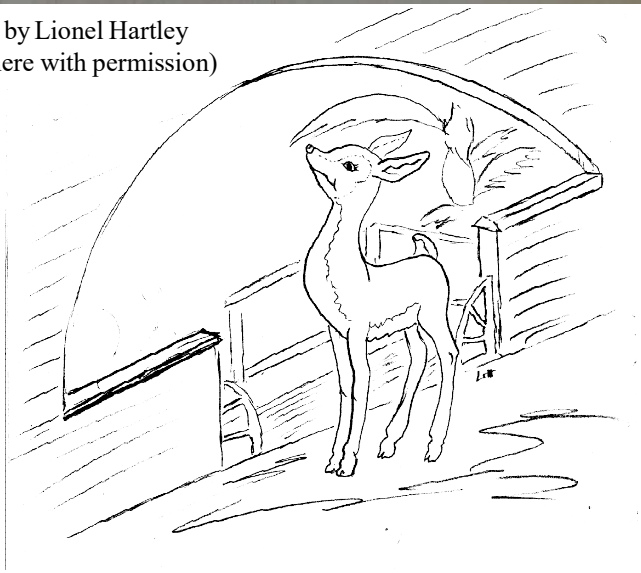
When a wood screw is concealed with a wooden plug (e.g. from a plug cutter) the excess needs to be cut flush with the surface before sanding the plug to an invisible finish.

This home-made right-angle saw is made from a hacksaw blade bolted to a simply shaped wooden frame.

Where the blade is attached, the handle has been angled slightly so that the resultant very gentle bow in the hacksaw blade enables the excess protruding wood from the plug to be cut flush with the surface without damage to the surrounding woodwork.

Tiny bolts and washers have been used to hold the blade, enabling it to be replaced when necessary.

Illustration by Lionel Hartley
(reproduced here with permission)



Foot Operated (Pedal) Vice

Working on his own often meant that when Lionel needed an extra pair of hands, he would have to make do.

Hence this all-metal hands-free spring-loaded vice operated with a foot pedal to hold workpieces for sawing, filing, drilling, cutting, shaping or bending etc.

It is made from welded steel box section and angle-iron.

He also found his design was much faster to operate than a conventional vice.

The front jaw stays stationary and the cantilevered back jaw clamps forward when the pedal is depressed.

The grip strength of his design is twice the operator's weight.

The foot pedal is wide enough to be operated by either the left or right foot and the base is secure and rigid as the pressing of the operator’s foot holds it in place (as well as clamping the jaws of the vice).

Drum Toybox

Lionel picked up a plywood bass drum from a bargain store for a pittance because the fabric was torn on both sides and the tensioners were broken, but he bought it because the plywood was in reasonable condition and he visualised what you see in this photo.

By discarding the fabric, bands and tensioners and cutting a wooden base out of an off-cut of marine ply, putting some rubber feet underneath, and making replacement handles all around, somehow the bass drum became a toy box which was much loved by his daughter when she was an infant. (She sat in it more often than put toys in it.)

Free-standing BBQ Extension

Salvaged from a broken Bar-B-Que, this gas burner (stove-top) was given a new life by the creation of a welded metal stand making it free-standing

After cleaning, it was repainted with glossy black heat-resisting engine enamel.

Free-standing
BBQ Extension Rangetop

Fretsaw Stand & Benchtop

When Lionel bought this reciprocating fretsaw it was all in pieces so as he restored it, he made a metal stand and an adjustable tilting benchtop with an overhead light.

The switch under the shelf controls both the light and the saw.

Several 6mm holes in the benchtop allow an adjustable guide to be placed in various locations on the benchtop.

From Hearth Brush to Hand-held Sander

An old hearth brush (hearth/fireside broom) whose bristles have worn away their usefulness, still has a useful plastic or wooden handle if screwed to a sandpaper-covered block of wood or simply has sandpaper glued to it after the bristles have been cut away or otherwise removed.

These handles have still plenty of life left in them.

Garbage-Bin Lid Lifter

Lionel says that when you use a walking cane with one hand and you are carrying a bag of garbage in the other, opening a garbage-bin requires an extra hand ... or perhaps inventing a home-made device to lift the lid for you.

Lionel made this twin garbage-bin lifter from some recyled steel offcuts and a length of pipe.

The fulcrum (pivot) is attached to a solid metal base and a rubber pad protects the sole of the user's shoe or boot from getting scuffed.

It is adjustable for different sized bins and lifts two lids at once.

The bins are easily removed for emptying and, after emptying, easily re-connected for using the lid lifter again.

2
GOLDCOAST.
66
2
CITY OF
GOLDCOAST.
66

2
CITY OF
GOLDCOAST.
66
2
CITY OF
GOLDCOAST.
66

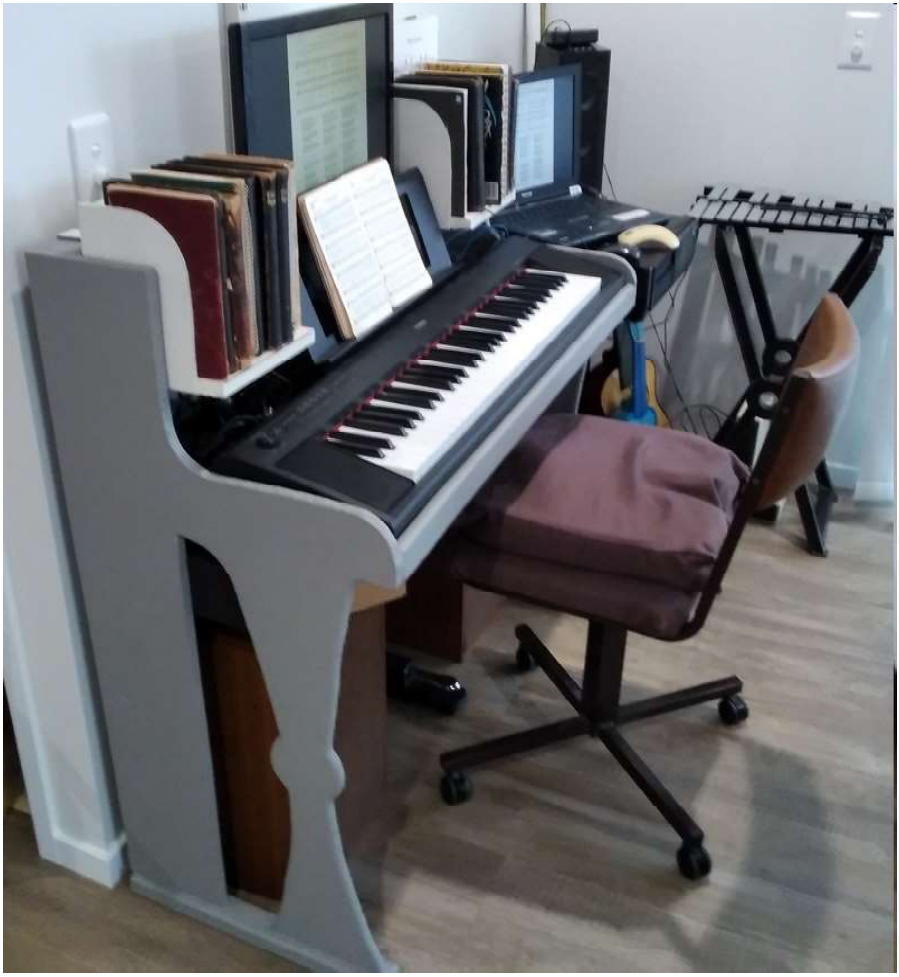
Gas Bottle Lifter and Stand

Lionel made this Gas bottle lifter and stand to use a 9kg bottle in place of a 45 or 90kg one.

It is of all metal construction with a pulley block & tackle lifting mechanism for the bottle.

Digital Piano Cabinet

This cabinet is shaped like an upright piano and not only houses a digital piano, it also has a computer screen for sheet music and midi recording.

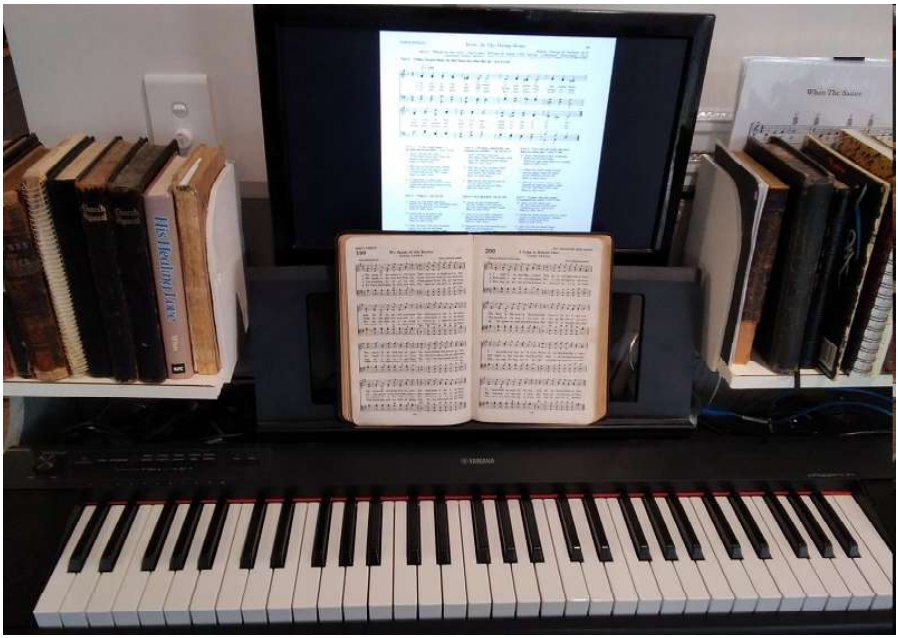


Underneath the keyboard is a pull-out drawer

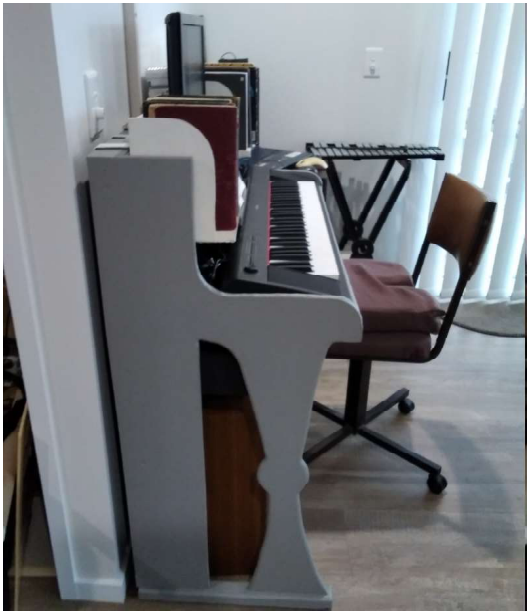
with a cut-down laptop that uses the screen above the piano keyboard.

The digital piano is connected to this laptop (or another along side) via Midi USB allowing for both recording and playback in Midi format.

The screen is also a DVD player and in addition has an HDMI Android micro-computer attached on HDMI-2 with an air-mouse for displaying sheet music when the cut-down laptop is not in use.



The chair has since been replaced with a home-made piano-stool.



Lionel also occasionally used a midi processor rack-mounted underneath when he wanted to record orchestral backing tracks for when he and his wife Rosemary played handbells.

Gazebo

This gazebo was originally built by Lionel as one of the stalls at the monthly markets on the Red Range Market Ground on his property at Red Range, NSW. It was later relocated and repurposed as a garden feature with a brick floor and rockery. Detachable black shade-cloth curtains were sometimes hung for privacy or shelter from the wind when it was in use.

House Exterior Restoration

This house at Red Range NSW was built right on the street frontage and was looking rather tired. Using heritage colours, wood-fill putty and several coats of paint, Lionel transformed it into this:

Granny Flat Restoration

This granny flat attached to our house at Red Range NSW was overdue for a refresher.

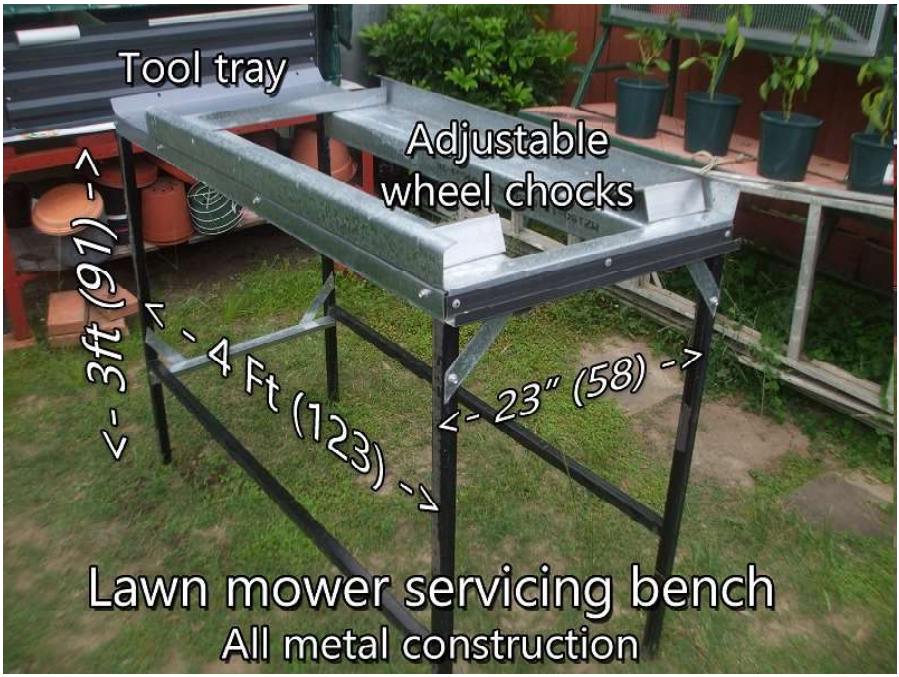
With a few coats of paint and re-building the window frame and windowsill, this is the result.

The arch design was painted onto the inside of the glass.

Lawn Mower Servicing Bench

Bespoke custom-made lawn mower servicing bench designed and built by Lionel.

Full 3ft (91) height to save bending while working. All metal construction. Made for standard lawn mowers (up to 20.5” (52) width). Removable and adjustable wheel chocks. Metal tool tray with ends shaped to avoid tools rolling off. Set of two 56” (150) removable ramps to save lifting the lawnmower. Generous opening on underside to access the blade etc.


Tool tray
Adjustable
wheel chocks
<- 3ft (91) ->
<- 4 Ft (123) ->
<- 23" (58) ->
Lawn mower servicing bench
All metal construction

Leatherwork Anvil

This leatherwork anvil has an end-grain woodblock (with carry handle) and a removable anvil made from a short length of railway iron.

The woodblock is two halves of a four-foot length of hardwood glued and bolted together with the grain

of each in opposite directions.

It has been designed for leatherwork as leather hole-punches ideally require a wooden end-grain block, and rivets and embossing tools typically require a metal anvil.

It is free-standing, has a carry handle on the side and is two-feet tall which is the ideal height for working while seated.

Four short lengths of angle iron are bolted on to form a base to keep it steady while it is in use.

Lionel intended to mount a leatherwork tool rack on the side, but this never eventuated.

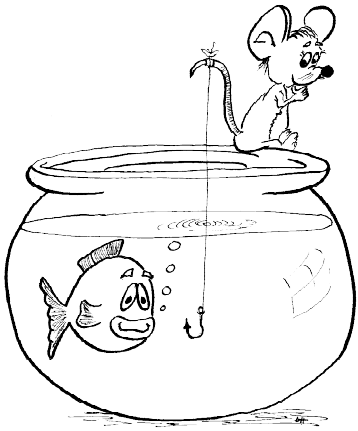


Illustration by Lionel Hartley
(reproduced here with permission)

Log Cabin Cubby House

What can be made from 898 seasoned redwood (hardwood) round tentpoles destined for burning as firewood?

Well, these photos say it all.

By cladding a pine framework with the tentpoles cut to various lengths, Lionel created this delightful cubbie house for his then-infant children.

It was a challenge, as it was nailed together with long galvanised nails, but every single nail required pre-drilling through the hardwood poles in order to assemble it.

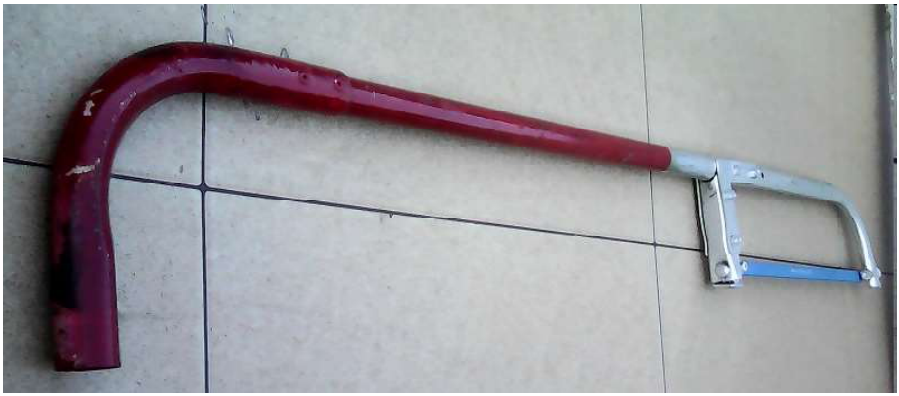
It features a generously sized doorway, windows, a waterproofed cathedral ceiling inside, a kiddie swing on one side and a verandah with a built-in adult-sized seat, all built on a platform of tongue-and-groove flooring on a hardwood base.

Illustration by M. Wilkins
(reproduced here with permission)

Long Reach Hacksaw

Lionel made this hacksaw (using a commercially made blade) at the request of a neighbour who required a long reach hacksaw for a particular project.

It consists of a length of pipe curved at both ends, with a bolt and wingnut on one end and a metal bracket the length of the blade from that end.



The curve on the other end formed the handle as illustrated.

The overall length was just under a metre (90cm)

800
850
900

Mahogany Cabin Trunk

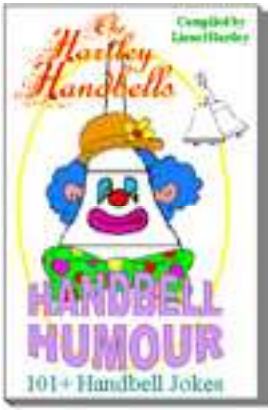
This large cabin trunk was made by Lionel to transport a set of handbells.

The sides were made from a single plank of recycled mahogany cut into four and dovetailed together to form a rectangle.

Then the Masonite base and top were glued and screwed on before the whole thing was cut in two along the sides, separating the box and lid.

The brass hinges, safety chain, locks, handle and corner protectors were then added. completing the trunk.

When used for handbells it had a foam lining with individual cut-outs for each bell.



The Hartley Handbells

Handbell book by Lionel Hartley, available free from

https://archive.org/details/handbell-humour

Metal Garden Bench Seat

Lionel made this extra long garden, verandah or patio seat with a metal back rest, and although it was completely made from steel, it was surprisingly comfortable.

It was 6ft 10in (208) long with two additional (removable) black vinyl padded seats for temporary use

(or for covered verandah use) that made it even more comfortable. These were made from a sewn vinyl cover surrounding a strip of upholstery foam.

The seat and back rest were from re-cycled metal fence rails and the frame and base of welded steel hollow box-section bolted to a steel footplate.

Metal Steerable Go-cart

This colourful go-cart was designed and built by Lionel using parts from a discarded Victa lawnmower chassis, and the top pole from a swingset.

The steering assembly and footrest were made from steel box-section.

It has adjustable steering reins, canvas padded removable seat, and a front hook for towing.

He made it suitable for ages 6-12 as it has an adjustable footrest depending on the length of the users' legs.

Miniature Piano for Marionette

This miniature mock grand piano, that Lionel made for the string puppet "Bert", has a speaker inside to play pre-recorded piano music from an external device so that it sounds and looks like the puppet is playing.

It has painted keys and a matching piano stool.

The music pages were photo-reduced so that their size is appropriate in relation to that of the piano.

This last photo shows the puppeteer, David, playing it in a public street in Murwillumbah NSW, to give you an idea of its relative size.

Modified Tape Measure

Over the years the humble tape measure has 'evolved' into the useful compact carpenter's tool we see today.

Lionel says that when he started hobby woodwork many years ago (a time his grandson refers to as 'the olden days'), all he had was a wooden yardstick that folded into four to fit in his pocket. (His overalls had a special pocket on the right leg put there by the manufacturer specifically for that purpose.)

But one of the tape measures that he uses now, he has modified to be more useful for some of his needs.

This tape measure also now has a powerful magnet on the back (useful for storing the tape measure on the edge of his metal workbench or for picking up stray bolts, screws, brads or nails).

If a screw drops on the ground, he can extend the tape measure and use the magnet to pick up the screw without having to bend down (he argues that this is creativity not laziness).

Furthermore, it has a cut-down carpenter's pencil attached to the front in line with the start of the rule so that marking out a workpiece requires only one tool.

When the tape is extended along or across the workpiece, the pencil aligns with the desired length which is then marked with the pencil.

Illustration by Lionel Hartley
(reproduced here with permission)

Multi-purpose Plumber's Bench

A plumbing, pipe cutting and shaping bench.

This fully self-contained and free-standing bench includes two styles of pipe vise (one for rapid cutting the other for thread-cutting), a metal saddle bender/

shaper for making your own saddle brackets (used to fasten pipes to a wall, etc.), a small circular anvil, a fixed pipe deburring file and a rack for a heavy-duty pipe and tubing cutter.

It is made from welded steel box section.

Musical Saw

Natalia Paruz (The Saw Lady) writes: This saw was made around the 1970s by Lionel Hartley, who says of his musical saws, "I made only a dozen or so.

These were made out of spring steel cut to size and shape by Coulter's Springs in Christchurch.

They had French-polished handles, hand-carved from English Oak salvaged from an old dining table.

The handles were slightly larger than a conventional saw handle and contoured so that it could be comfortably supported with the knees while playing. I also made matching Left-hand Grips that could be fastened to the end of the blade with a spring clip.

The blades were 31 inches and the total length of the saw, including the handle was one yard exactly.

The blade was fastened to the handle with home-made brass studs turned on a home-made lathe.

I chose spring steel specifically to give my saws a distinctive tone - less melancholy than a conventional

steel saw, and easier to play (spring steel 'sings' naturally).

I used commercially made violin-cello bows with natural horse-hair simply because these were so readily available it seemed pointless making my own."

Information taken from
www.sawlady.com/saws-made-for-music

This photo was sent to Lionel recently by an anonymous buyer who bought one of his saws from the *Sedley Wells Music Store* in Christchurch about 50 years ago but he/she no longer has it.

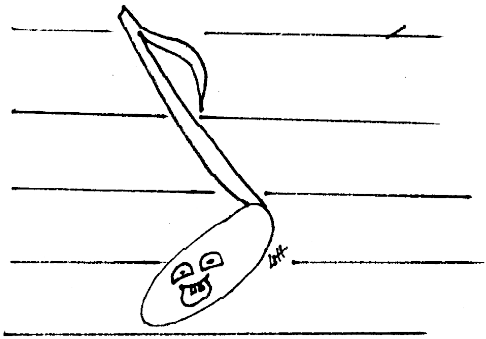


Illustration by Lionel Hartley
(reproduced here with permission)

Nature Sounds Effects Generator

This stage or film/video recording sound effects generator, built into a handy storage box has a volume control, Stereo RCA output and runs on 240volts AC.

It has a continuous unlimited loop of rippling brook & bird sounds that are stored on a pre-programmed computer microchip and played through a small built-in amplifier and speaker or sent directly to a sound mixing desk (or both).

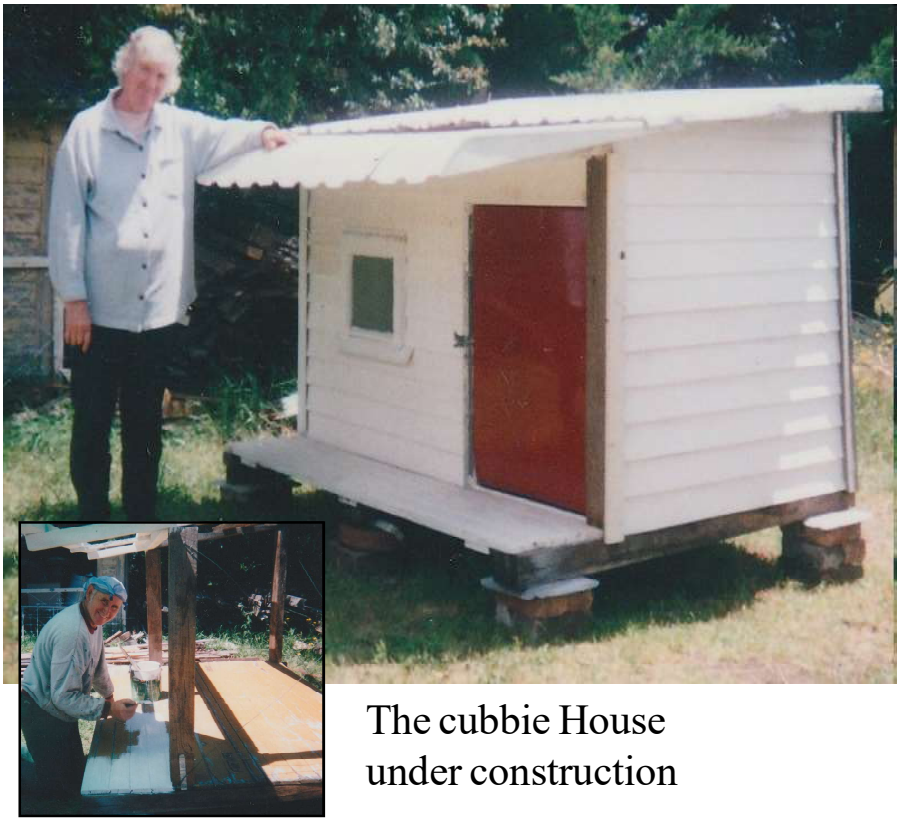
The sound track was recorded by Lionel in the Watagan Mountain National Park in NSW and transferred to a microchip wired to and using a compiler written for an Atari ST computer.

A video clip of this sound effects generator in action may be viewed or downloaded from **https://archive.org/details/sound-efx-box**

Norreen's Cubby House

This cubby house, one of several made over the years by Lionel was built at Red Range (NSW) for one of his children when she was young.

It includes a verandah and aluminium awning and is clad with plastic weatherboards, a *Perspex* window and it has metal door large enough for an adult to enter if desired.



The cubbie House under construction

Overnight Plant Stand

With cage doors to protect plants from wildlife at night.

2.4m long.

All metal construction (Light-weight welded steel frame with sheet-aluminium cladding).

Lower shelf for extra plants or for sorting.

Sloped front for extra stability.

Screened drainage holes for overflow when watering plants.

Carry handles at each end (requires 2 persons).

Two generously-sized screened doors with secure latches.

Painter's Step Ladder

Lionel made this painter's step ladder with a vertical hand-rail for added security, and paint-can hooks to save getting up and down too often to top-up the paint bucket.

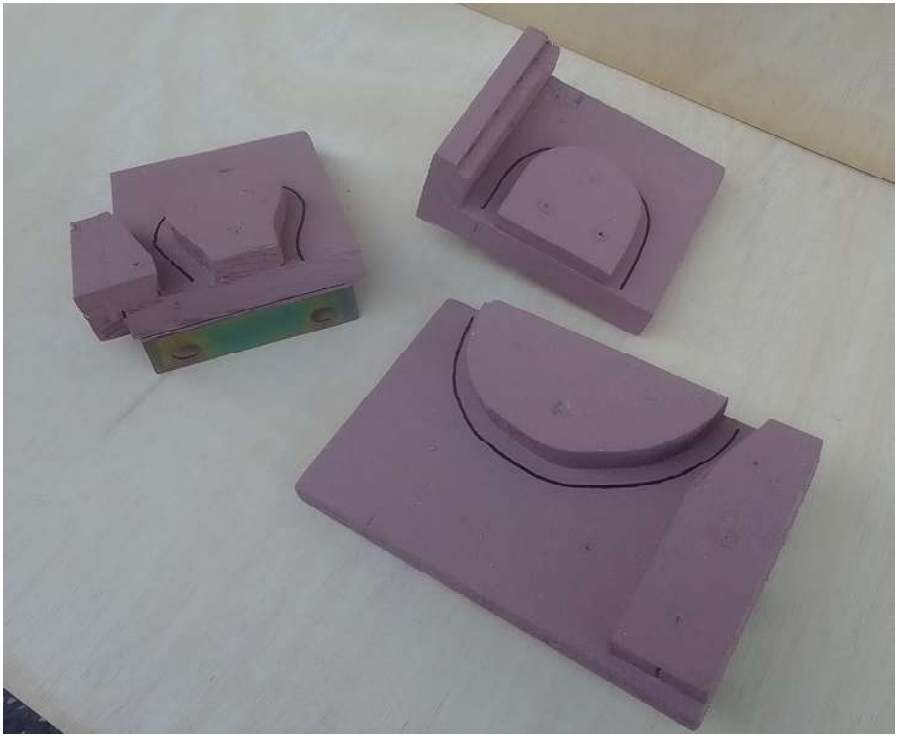
It is of all metal construction made from lengths of re-cycled pipe bolted together.

Sturdy and comfy to use, with the top rung padded (for resting the user's knees or legs against).

Pipe Bending Forms

These forms are combined with a tube-bending spring to create decorative shapes out of half-inch copper or poly (polythene or polyethene) pipe or to shape pipe or tubing for plumbing purposes.

Each (red ironbark) wooden form has a metal bracket fastened underneath for mounting it on the edge of a bench or clamping it in a vice to keep it stationary while the pipe is being shaped.



Hot Tool Pipe Threaders

These pipe threaders for poly (polythene or polyethene) pipe or conduit have brass fittings on each end for different size plumbing fittings.

The tool is put in an engineering vice while the required end is heated with a heat gun, blow-torch or

with a gas flame and the pipe to be threaded (external or internal) is pushed onto the tool's hot end, allowed to cool and then unscrewed, leaving a thread on the end of the pipe.

This can then be used for construction, plumbing or electrical fittings or simply to join two poly pipes together.

The end fittings of this tool are cut from discarded plumbing equipment and bolted to a steel handle.

Each each end has a different thread size.

The handle of the tool is made from a length of heat-absorbing steel pipe* with the ends flattened and drilled to accept the bolts and spring-washers that hold the threaded fittings.

*Heat-absorbing steel pipe is made by using a minimum of three pieces of pipe the same length but of different diameters so they fit snugly inside each other. These are then assembled to form a single rigid pipe that has sufficient metal within to absorb most of the heat when the tool is in use.

Portable Lighting Stands

These all-metal portable stands for studio or stage each take up to 4 flood-lamps or spotlights.

One has has a double power-point at the top of the pole, has a steel 4-point base and extends to approx. 2 metres (7 feet) tall.

The other has a tripod base and extends up to 3 metres (10 feet).

They were built for lighting the outdoor stage for an annual carols-by-candlelight program.

Router Table

This hinged-top router table with home-made guides has a storage box underneath the hinged table top to store the router and a large collection of accessories (excepting the home-made aluminium guides which are stored on top).

The legs can be removed, if required, for transporting it in a vehicle.

Apart from the marine-plywood top, it is of all metal construction, the box having welded seams.

Hand Sawing Guide

This well-used simple wooden 2ft 6in guide has a metal strip along the front edge that locks to the bench.

Two holes punched in the saw blade align with two insert nuts on the surface of the guide for storing the saw with two thumbscrews when it is not in use.

It has an adjustable screw clamp utilizing two insert nuts to hold the workpiece while it is being cut.

Illustration by Lionel Hartley
(reproduced here with permission)

Trailer Stand

To keep the drawbar of his trailer level without undue weight on the jockey wheel when it was in storage (which would have created a flat section on the jockey wheel's rubber tyre), Lionel made this trailer stand.

He welded a 50mm towball to one end of an 18-inch length of 2x2 steel box section, welded a steel disk to the other end, put a heavy-weight eye bolt

through a hole below the towball and welded the nut in place to hold it secure.

This not only made a useful stand that kept the drawbar level, but was made more secure as the trailer safety chain was padlocked to the ring to discourage would-be thieves.

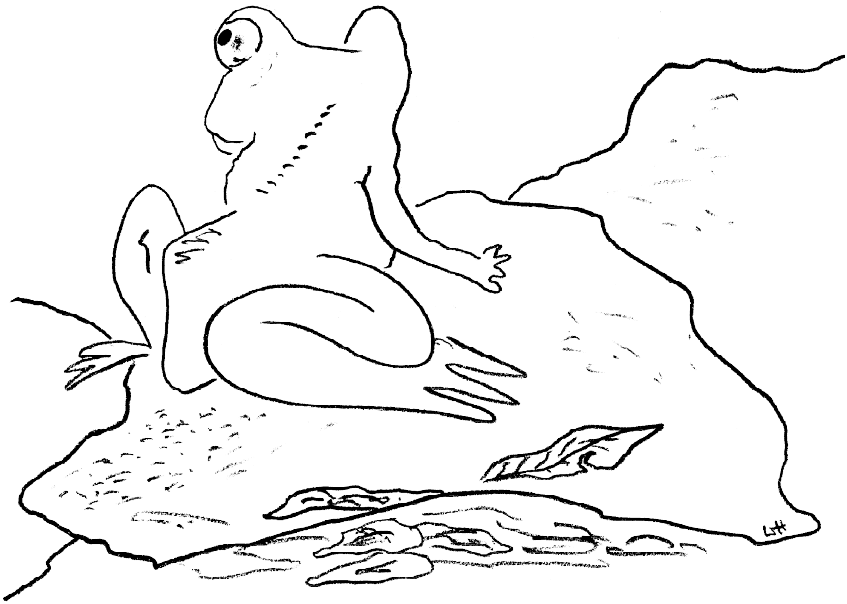


Illustration by Lionel Hartley
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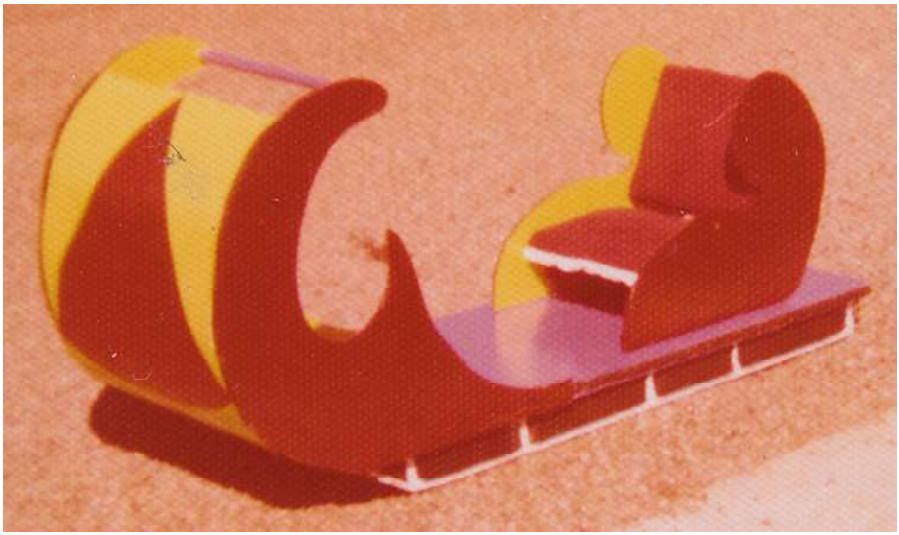
Sleigh Stage Prop

The two sides of this sleigh (built as a stage prop) were each cut out of a square sheet of 5-ply plywood.

Lionel planned it so that the sides of the seat



shape and inner curve on he frontsides could be cut with a single sweeping arc to eliminate wasting material.

The curved front is from three layers of 3-ply, steam laminated into a curve using a temporary shaped form made from scrap timber and the layers adhered together with hot glue.

The runners are simply painted onto a wooden

strip as the whole thing rides on a set of hidden casters.

The rail at the front is from a discarded broom-handle.

The seat is upholstered with red corduroy stretched over upholstery foam and finished with a piece of white lace.

Illustration by Lionel Hartley
(reproduced here with permission)

Sideshow Booths

These sideshow booths are a few of many designed and made by Lionel with original artwork as fundraisers for the Glen Innes (NSW) Pathfinder club.

Out of fairness to all, they all are games of skill and not games of chance.

They were first used at a weekly market at Red Range, NSW. These photos were taken at a fête day at the Glen Innes SDA Church.

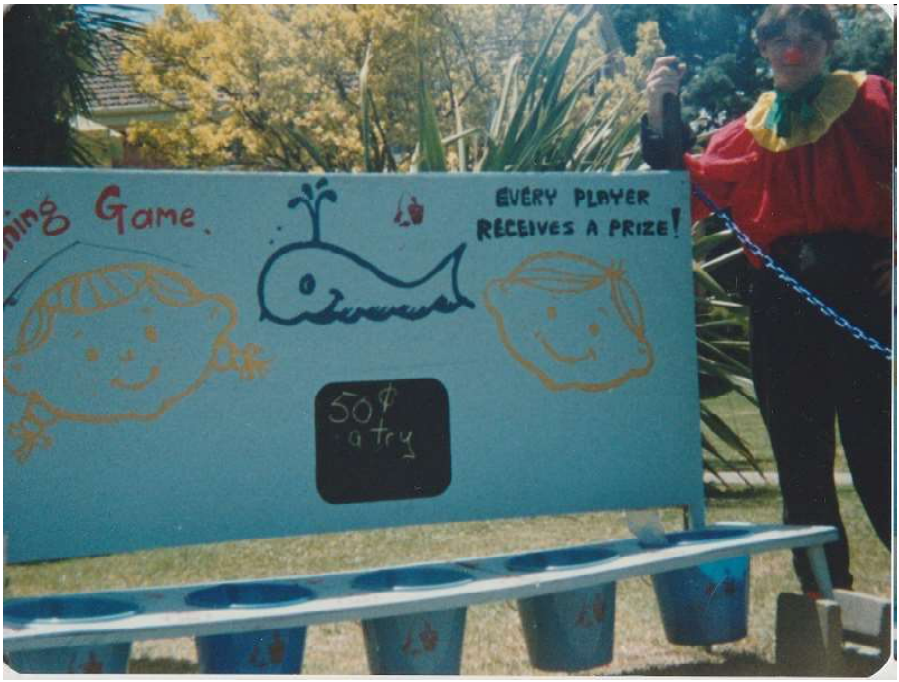
These photos include "Bop My Nose" (throwing a ball so that it goes through the clown's nose and drops into a bucket below), horseshoe pitching, a fishing game with child-sized fishing rods with wire hooks on the line to 'catch' plastic fish, each labelled with a specific

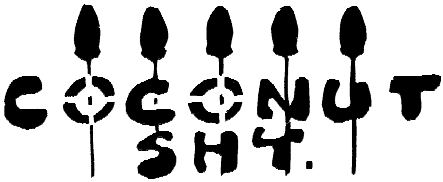
prize, a coconut shy with painted coconuts, each with a hole to throw a ball through and claim a real coconut as a prize.

A free soundtrack for a coconut shy played by Lionel on a barrel organ is available as an mp3 from **https://archive.org/details/lovelybunchcoconuts-barrelorgan**

A number of others were used but it is not known if these other ones were photographed.

Displays were made to easily fold-up for transport and storage.





Stencils available free from
https://archive.org/details/stencils-vol1
or https://archive.org/details/stencils-vol2

Ute Canopy Shed

This temporary shed for lawn-mowing equipment was made from a fibreglass ute (utility vehicle) canopy supported on a steel frame, hinged to fold flat when not in use.

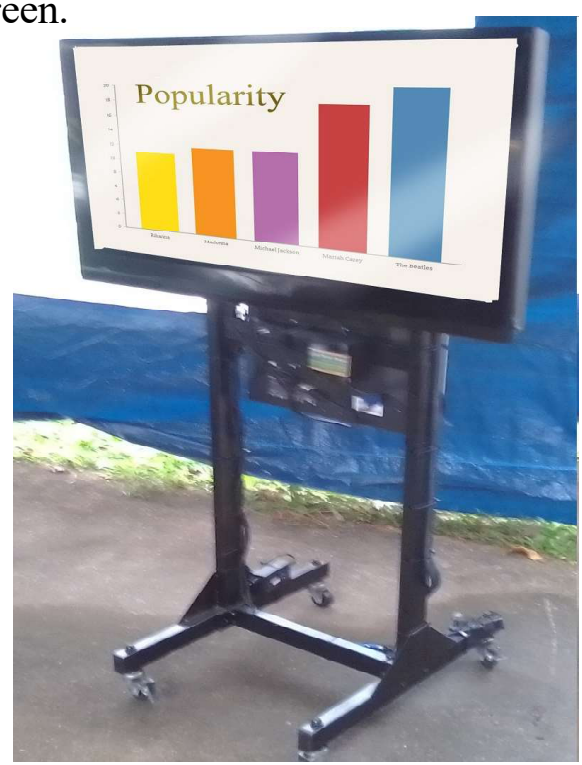
It was clad with aluminium sides with flashing on the sides and ends for waterproofing. Designed to be easily dismantled, it had tinted windows, 12v lighting, and narrow built-in shelving.

The two brackets on the side facing the camera were there to hold an aluminium extension ladder.

Three-monitor Presentation Screen

This portable system was used occasionally by Lionel for family-life seminars in Nerang (Qld).

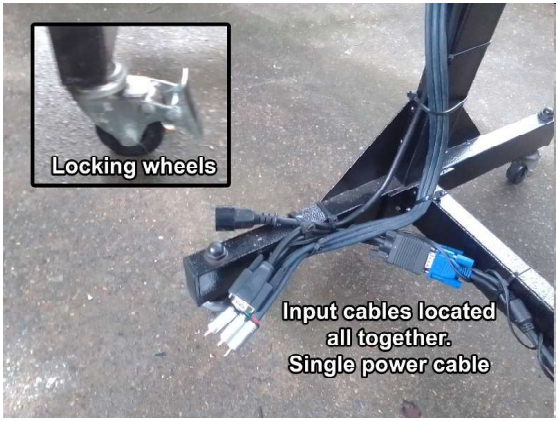
It consists of a metal stand on wheels with a very large screen on one side (facing the audience) and on the back is a video monitor showing the presenter the view from a recording video camera, and a second screen (the lower one) that is a clone of the large screen to show the presenter what the audience is seeing on the big screen.



If the presentation is not being filmed, then the video monitor, which has a built-in DVD player, can be used to screen a video which is able to be cloned on the large screen.

All the connections for power, video, computer audio, etc. are all centred in one place at the back to avoid having a tangle of cables in all directions (see next page).

Update: Unfortunately, this was completely destroyed by a deliberate act of vandalism by some anonymous person when it was in use at an outdoor event.


Locking wheels
Input cables located
all together.
Single power cable

Self Contained Workspace

A portable handyman workspace comprising sawbench, bench grinder and hobby bench.

Consisting of a tabletop circular saw with extra blades sotred in a holder on the front. Bench grinder with conventional and wire-brush wheels. Small bench vice. Adjustable/removable sawblade guard. Various guides: Straight and mitre. Various push-sticks. Extra long mitre and feed guide with metal storage tube. Tabletop wings with groove for mitre/feeder guide. Bolt-on extension arm extends the wings by a further

two-feet. Two free-standing adjustable roller guides: One for long timber, one for wide timber. Double extension powerpoint. Anti-rattle clamp for blade

guard. Rear wheels with barrow-type handles. Holder for overhead worklight. Collection tube for sawdust.

It also has a removable aluminium cover for all-weather storage or covering during an unexpected rain event.

Illustration by Lionel Hartley
(reproduced here with permission)

Scissor-style Sawhorse

Lionel replaced his old six-legged wooden scissor-style sawhorse (for cutting logs, pipes, fence-posts, etc.) that he made decades ago, with this four-legged metal one made from angle iron and bolted together.

It is three-feet wide, and thirty-inches tall.

The wedge shape holds the item steady during cutting with a chainsaw, circular saw, hacksaw, handsaw, crosscut or bow-saw, etc.

It has a foot rest for stability and a replacable wooden overcut guard to protect a wayward sawblade from being damaged by the metal frame.

The frame is made out of re-cycled angle-iron and strips of steel bolted together.

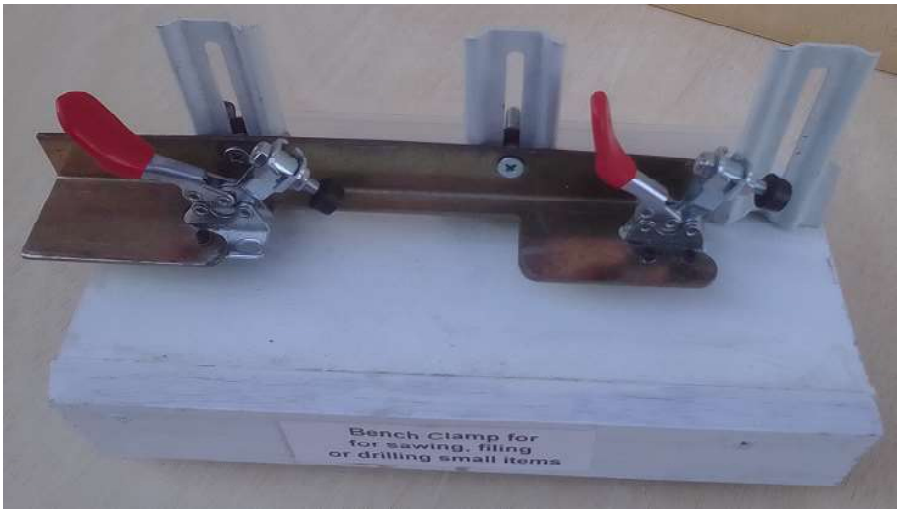
Unlike its predecessor this one folds flat for storage or transportation.

Illustration by Lionel Hartley
(reproduced here with permission)

Sawing Clamp for Small Items

This versatile Sawing Clamp is designed to hold small items for sawing, filing or shaping.

It consists of a flat base with the front edge protruding below the base so that it locks on the edge of a bench.



On this base are three equidistant metal brackets (re-purposed curtain-rail fittings) allowing a custom-made bracket holding two self-locking clamps to be adjusted for height.

The idea of the third bracket is to allow the clamping assembly to be moved to a forward position, depending on the item to be held.

Ruler Stops

Lionel has made several of these useful stops for various rulers of different lengths and types both for his own use and for others to use.

They are useful for both measuring and rememebering measurements. They can also be used to rule parallel lines along the sides of a workpiece or for marking out tenon joints.

They consist of two pieces of wood, one of which has a groove down the centre the width and thickness of the particular ruler.

In the centre of this groove is a threaded nut and a hole right through.

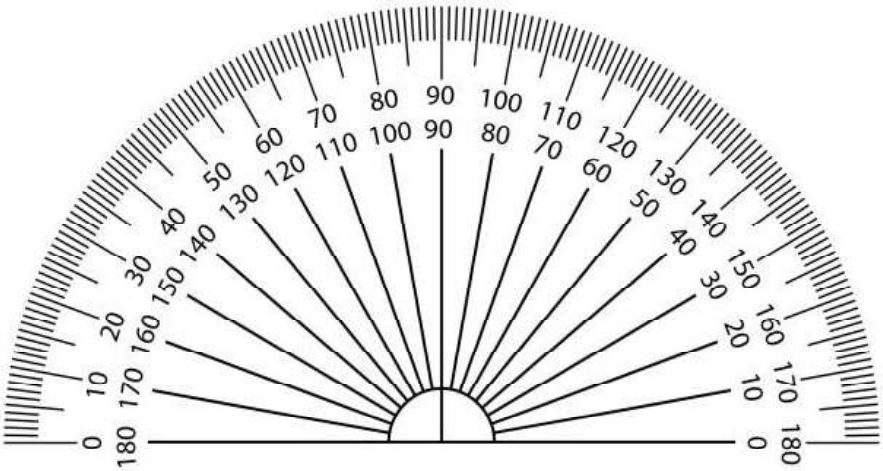
The two pieces are then bolted together and a bolt with a knob is fed through the hole and screwed

into the threaded nut.

Then it is tightened enough to protude into the groove where it will lock itself to the ruler.

A few stops he also made out of a thick slab of aluminium simply had a threaded hole instead of a threaded nut.

He also made a wedge shaped one (for marking out dovetail joints) with the groove cut at a 7.5 degree angle on one side (for soft woods) and a 8.5 degree angle on the other (for hard woods).



Round Anvil on a Stand

Lionel made this round anvil when he was teaching himself how to use a high-powered arc welder as a metal cutting tool.

He cut the circular top for this anvil from a solid square slab of steel ten-inches across and two-and-a-half inches thick with a pre-drilled one-inch hole in the centre.

He then welded this to part of a truck axle hub and mounted it on a stand using an automobile brake drum as a base.

The pipe extending out the side, is a handle for carrying or steadying it (if necessary) when it is use - positioned low down to keep hands clear of the anvil's striking surface.

On more than one occasion, he used the hole in the centre to hold a tapered-end shoe last.

Removalist's Furniture Lifting Bars.

To lift and carry wardrobes & large cupboards with ease. (One person at each end)

Each one of this set of two consisted of a metal square box-section shaft with a welded and padded hook at one end and a padded handle at the other.

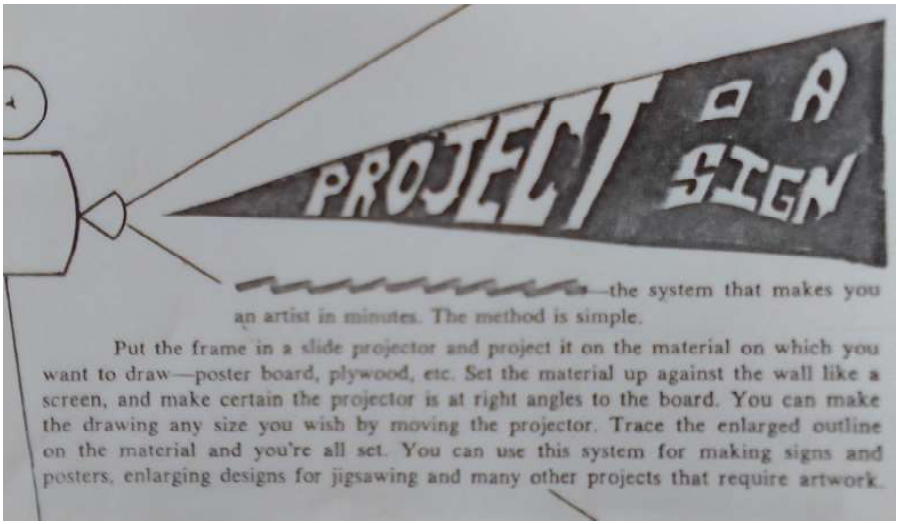
Quicker and more stable than traditional webbing lifters.

The 2 x 3ft (93) shafts means no back-bending.

Robust for commercial removal-ist use or DIY carriers

Project-a-sign

As a fundraiser in the 1970s, Lionel invented Project-a-sign.



This was a resource for enabling sign-writing, making stage scenery, cycloramas, murals, plywood Christmas displays, posters and banners etc. without the actual user having the need for any artistic skill.

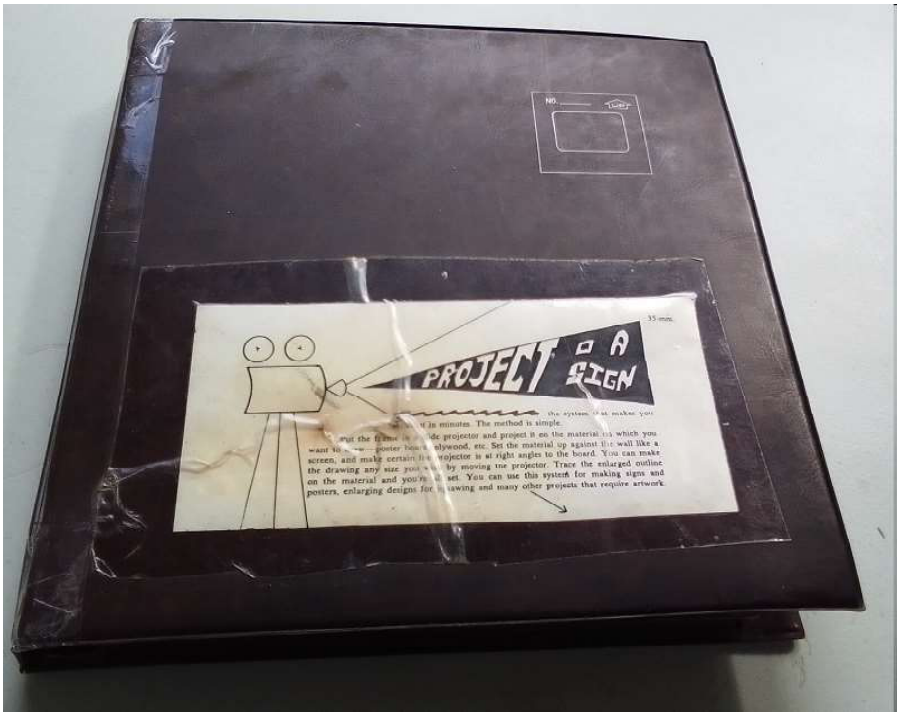
The 2,650 hand-drawn illustrations, mounted in projection-slides were simply projected onto the posterboard, plywood sheet, canvas flat etc., the user then traced around the outline and painted the article as appropriate.

The Project-a-sign project consisted of 2,650 hand drawn original pen-and-ink illustrations that were photo-reduced to the size of a 35mm film slide, printed on transparency film, cut and mounted onto plastic slide mounts.

These were then sold in sets of 20 (sign lettering, traffic signs and subjects such as hobbies, transport, cartoons, music, religious graphics, people, occupations, seasonal illustrations, etc.)

The sign lettering slides had the full alphabet on each slide in a different calligraphic or plain font.

The photos show the sampler display book he used for promoting these.

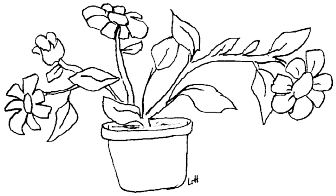


After several years of successful sales, the demise of slide projectors and the advent of data-projectors made Project-a-sign redundant.

Illustration by Lionel Hartley
(reproduced here with permission)

Potting Shed Sink

Take an ordinary stainless-steel sink bench and make for it a bespoke light-weight welded stand from steel box section, add a drain hose, stand it under or near a water supply and, hey-presto, we have a sink for a shade-house or potting shed.



Illustrations by Lionel Hartley
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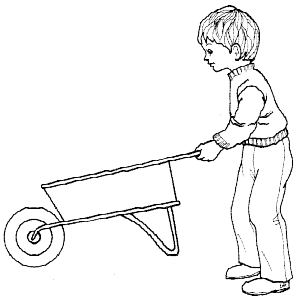


Post-Hole Digger

Lionel made this manual post-hole digger out of welded plate steel and galvanised pipe for his father who insisted that a fence post should have a minimum of one-third the length in the ground and no more than two-thirds above.

So Lionel made the digger 6 feet long with a 9 inch wide blade recycled from a six-inch length of a traveller's sample of steel water-main pipe.

He added some cutting flutes riveted inside and

each one was reinforced with a blob of weld.

The pole and handle was made out of re-cycled water pipe and the whole thing was welded together using an arc welder that Lionel's brother Edward had made from an old industrial transformer.

The top T-shaped handle was 28 inches wide as it required the combined strength of at least two people to dig a post-hole up to 5 feet deep. (Turning it was a lot easier than lifting it out.)

Illustration by Lionel Hartley
(reproduced here with permission)

Tree-stump remover

This pier, pile, tree-stump or fencepost remover is of solid all-steel construction with an extra long (removable) handle for leverage.

It has a chain lifter with both a hook and a self-locking loop.

The assembly folds flat for storage and/or transportation and is quickly assembled for use.

The legs are made of two-and-a-half inch re-cycled round pipe with wide angle-iron feet bolted underneath.

The shaft is made from two-and-a-half-inch steel square section and the handle part of the shaft from a

recycled two-inch round steel pipe.

The pivot is a long one-half inch hardened-steel bolt with a wingnut for dismantling the assembly if required and for positioning of the adjustable handle to allow for different leverage requirements.

Yes, it is heavy, but yes, it is also very strong and easy to use; it has even been used to lift the large concrete lid from off an underground septic tank.

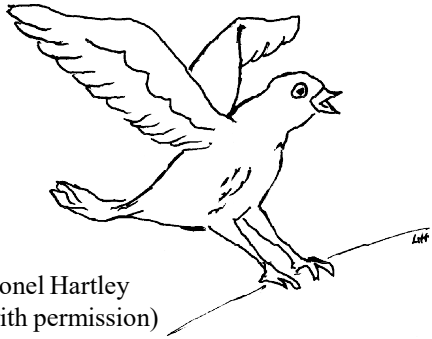


Illustration by Lionel Hartley
(reproduced here with permission)

Shear Cutter/Guillotine

This versatile free-standing, foot-pedal operated shear cutter was made by Lionel to make metal brackets and corner braces out of galvanised steel strapping.

Made entirely of re-cycled materials, it has a metal cover so it could be left outdoors if required.

End-drilling Holder

(for end-drilling dowels and tool handles)

Without damaging it, how do you hold a short length of dowel or a turned wooden handle while you drill a hole to insert, for example, the tang (pointed end) of a file to create a handle?

This adjustable jig holds handles and dowels of different sizes vertically and enables the user to safely centre and drill the holes without damaging the handle such as when held in a regular vise.

A selection of shaped washers for different size dowels are stored on one of the M6 knob-bolts.

Hand-held Drilling Guide

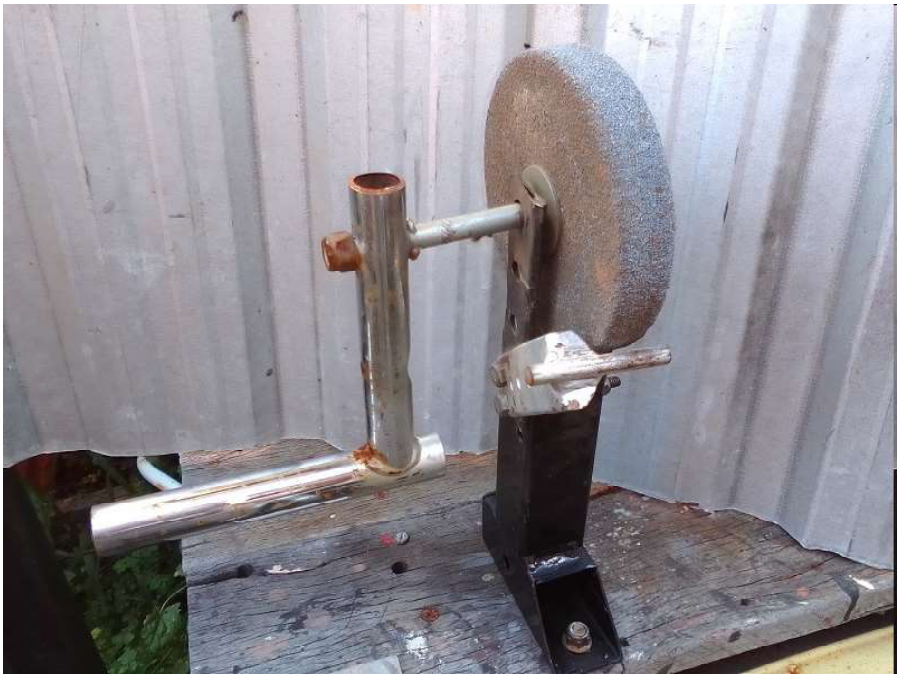
This hand-held drilling guide is used in conjunction with a hand-drill to enable a hole to be drilled at exactly 90 degrees or 45 degrees without any guesswork.

Simply made of two pieces of metal plate shaped and screwed to an offcut of timber shaped into a handle.

Hand Powered Bench Grinder

Knowing that he would need to do a tool-shaping and sharpening job on a Sunday morning, and do it quietly (not wanting to disturb the neighbours using an electric bench or angle grinder), Lionel hastily assembled this hand grinder on the Friday before, by using a spare grinding wheel and material from his scrap-metal bin.

He made it to bolt (or clamp) to the benchtop and by winding it slowly he was able to finish the task on Sunday with minimal noise.



Tumbler Composter Modification

When Lionel bought this 160 litre dual-bay tumbler composter he discovered that the stand that came with it meant the tumbler was barely above the ground.

So he modified it by making a sturdy metal stand at a height (1 metre) that makes it easy to fill or harvest worm juice.

He also replaced the original flimsy centre axle with a thicker galvanised pipe with bearings for durability as he imagined that wet compost surrounding an insubstantial piece of tubing would be an open invitation for corrosion.

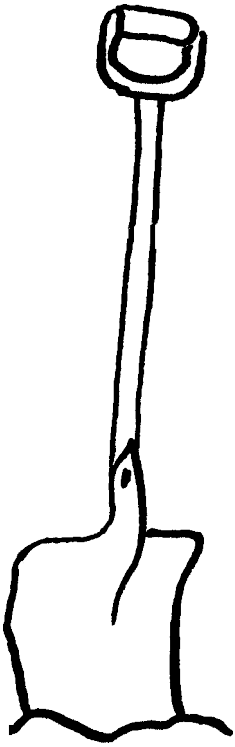


Illustration by Lionel Hartley
(reproduced here with permission)

Wooden Commode Chair

This solidly constructed wooden commode chair has a baked enamel collection container recycled from a 1950s refrigerator.

The chair was made by Lionel out of re-cycled Victorian Ash for his aged mother during her convalescence.

The warm wooden seat has been contoured for comfort.

The collection container easily slides out from front (he found from conversations with other commode users that those chairs that have the collection container removed from the back need to be moved away from a wall to access the container, potentially spilling the contents in the process).

It was painted to blend in with other furniture in

her unit and has a matching wooden cover to disguise its use as commode and allow it to also be used as an ordinary bedside chair. It has a shelf at the back of the pan for storing extra paper and cleaning supplies.

Caravan Manoeuvrer

This manual trailer/caravan puller or manoeuvrer is of all metal construction and is 54-inches (137cm) long to provides extra leverage to easily manoeuvre a trailer or caravan into awkward spaces (push or pull) when used in conjunction with the trailer/caravan jockey wheel.

Up and down movement of the handle is possible due to a spring-loaded standard (50mm) tow ball on a welded and hinged framework.

Two wide easy-to-grip handles make easy work of moving even heavily-laden trailers.

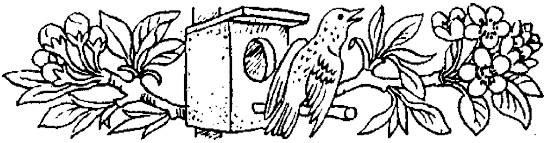


Illustration by Lionel Hartley
(reproduced here with permission)

Sawbench Extender Rollers

The first of these four sawbench extenders was made from two 12-inch lengths of Dexion (perforated/ slotted steel angle shelving material) with the ends rounded.

These were bolted together with wheels from a child's skateboard and mounted on an adjustable tripod that was made originally for a dressmaker's dummy.

It proved very useful when cutting the large panels of marine ply for Jacob's Cubby House.

As you can see by the paintwork, it got a lot of use.

The second of these four sawbench extenders was made by mounting a length of clear fibreglass tubing between two rubber plugs with an axel threaded

the full length and protruding beyond.

This was clipped between the ends of a custom-made bracket mounted on an adjustable vertical pole with a heavy metal base.

The third of these four sawbench extenders was made by mounting the rubber roller from a discarded

older-style ink-jet printer, between the ends of a custom-made bracket mounted on an adjustable vertical pole with a cross-shaped wooden base.

The fourth of sawbench extenders is made from a heavy-duty stand which was once used for a huge 36-inch orchestral cymbal.

The cymbal was long gone and the stand in a very poor state, having been stored out in the weather.

Once rust was removed and it was re-painted, the top fitting was replaced with some metal brackets, a cut-off section of an aluminium roller from a holland blind and the plastic fittings from another 2 blinds.

It has had good use as an extra pair of hands when handling long material on the electric mitre-saw.

Not only is it strong and fully adjustable, it folds down compact when not in use.

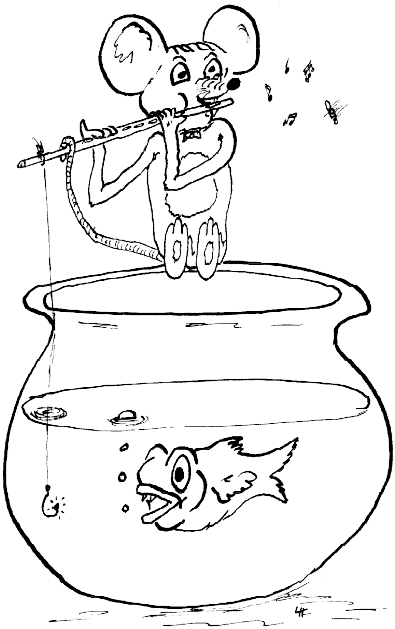


Illustration by Lionel Hartley
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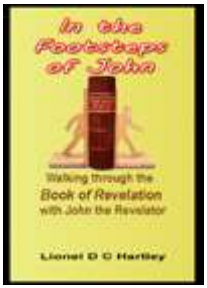
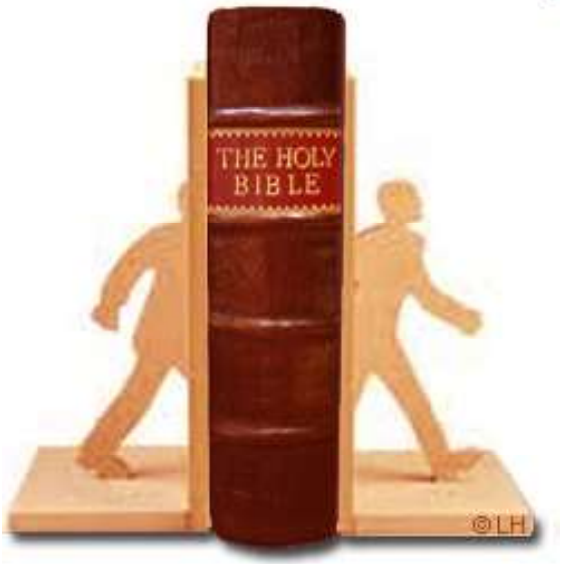
Walking Through the Bible Bookends

Lionel developed a 20-part Bible study seminar studying the biblical Book of Revelation. The series was entitled "In the Footeteps of John" (John being the writer of the Book of Revelation).

As a feature display, he used large Bible displayed between a set of real bookends that he had made out of wood.





The seminar has been posted online (See below) and, following many favourable comments, he also uploaded a free template so others could make their own bookends if they chose.

Seminar: **https://archive.org/details/john1book**
PowerPoints: **https://archive.org/details/john1ppt4web**

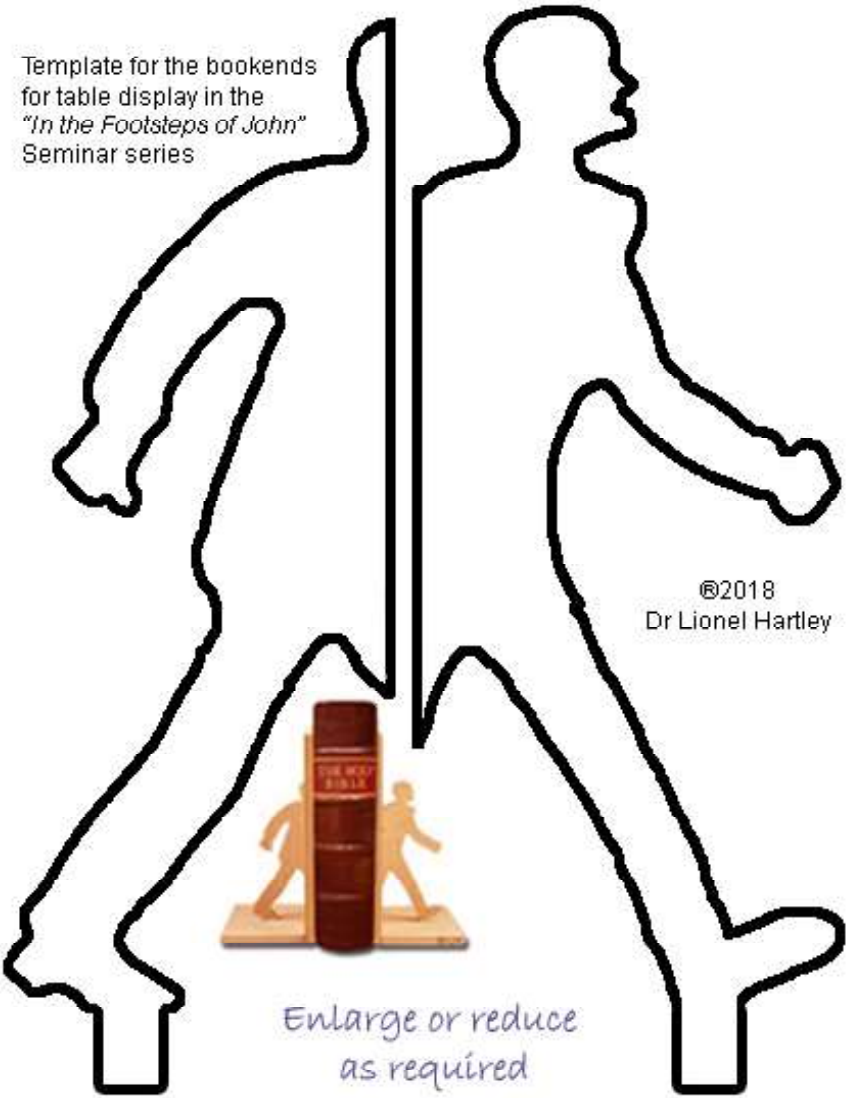


Illustration by Lionel Hartley
(reproduced here with permission)

Seminar: **https://archive.org/details/john1book**
PowerPoints: **https://archive.org/details/john1ppt4web**

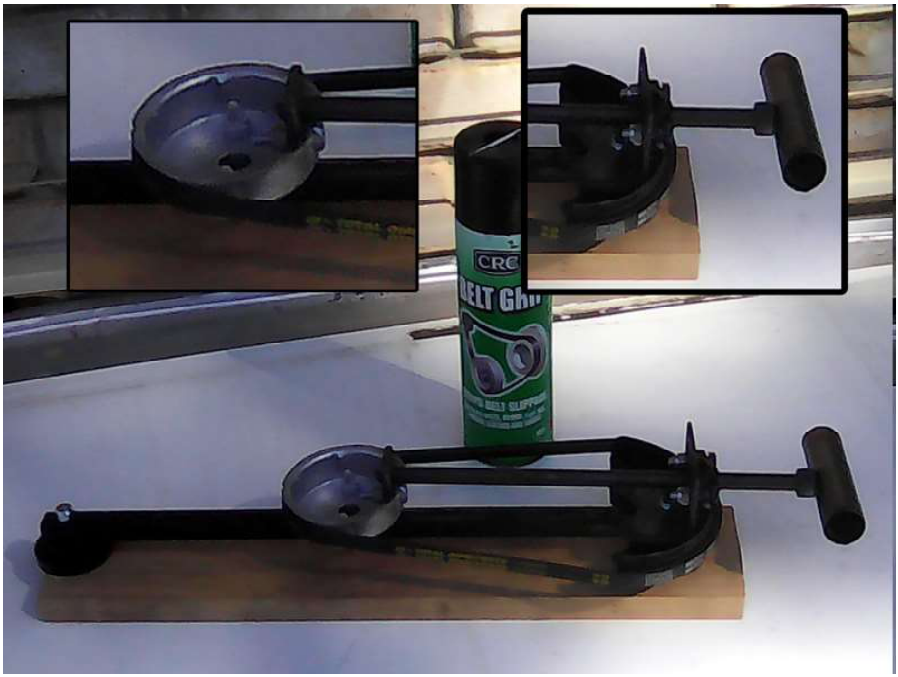
Pulley-belt Stretcher

Lionel needed a new pulley belt for his drill press but the new belts available locally were either a fraction too small or massively too large.

So he built this pulley-belt stretcher.

It is of all metal construction on a wooden base and is fully adjustable from 40 to 76cm.

By soaking the undersized pulley belt in hot water, stretching it and allowing it to cool while still under tension, he was able to modify a belt to exactly the size he wanted.



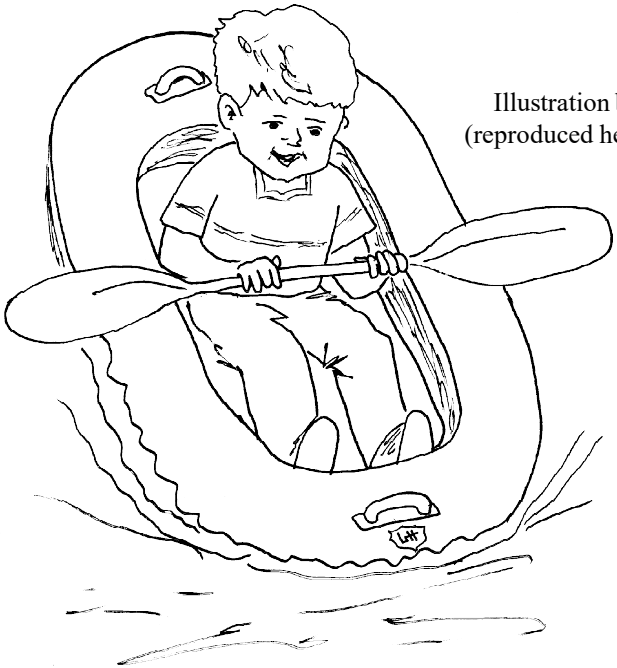


Illustration by Lionel Hartley
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Portable Puppet Theatre

On the following pages are illustrated one of several puppet theatres that Lionel built over the years.

This folding hand-puppet theatre is designed to unfold and bolt with wing-nuts onto a custom-made wooden folding table.

It has draw-string curtains and a plain black backdrop. The whole assembly folds flat for storage and transportation.

Lionel made the "hamburger" puppet from a plastic pet's squeaky toy purchased at a discount store and cut crossways in two, and then he added a body, a tongue and ping-pong-ball eyes.

Backing tracks were pre-recorded with sound effects and narrated scripts written by and read by Lionel and others. An example of one such script is online at **https://archive.org/details/rubbing-out-words**

Lionel's Place

Various Planter Boxes

Let these ’photos speak for themselves. These were all designed and built by Lionel and planted out by his wife, Rosemary.

Original painted nativity displays also by Lionel.

Playground Train

This play train was built by Lionel for his family's home playground using recycled materials.

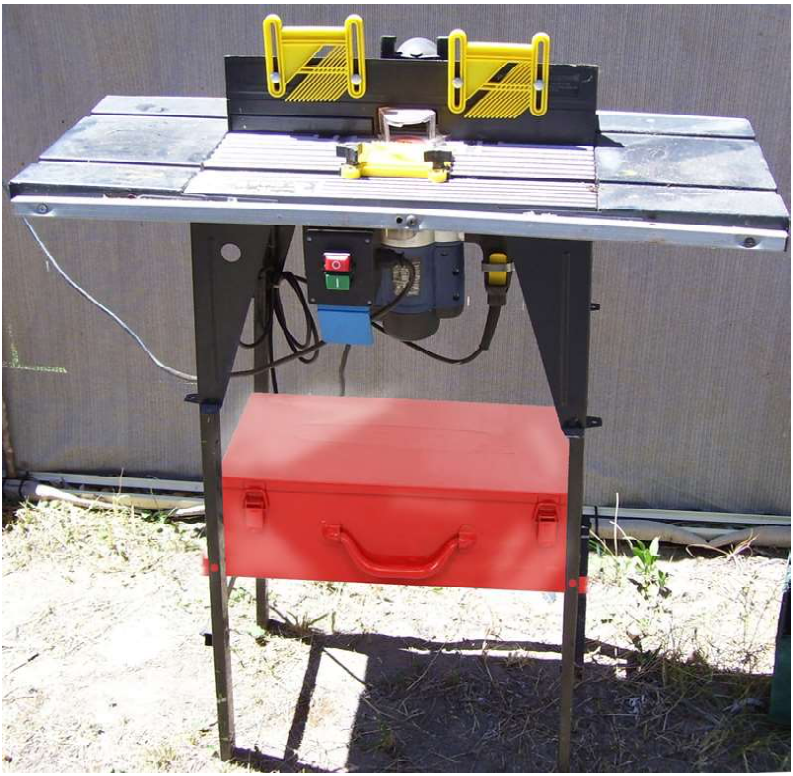
With 16½ acres of playground, slowly towing the railway carriage on this home-made sleigh behind a tractor was an invitation for the neighbour's children to all join in.

An old motorbicycle with the rear wheel imbedded in a slab of cement made a fun and safe addition to our playground.

Modified Bench-Router

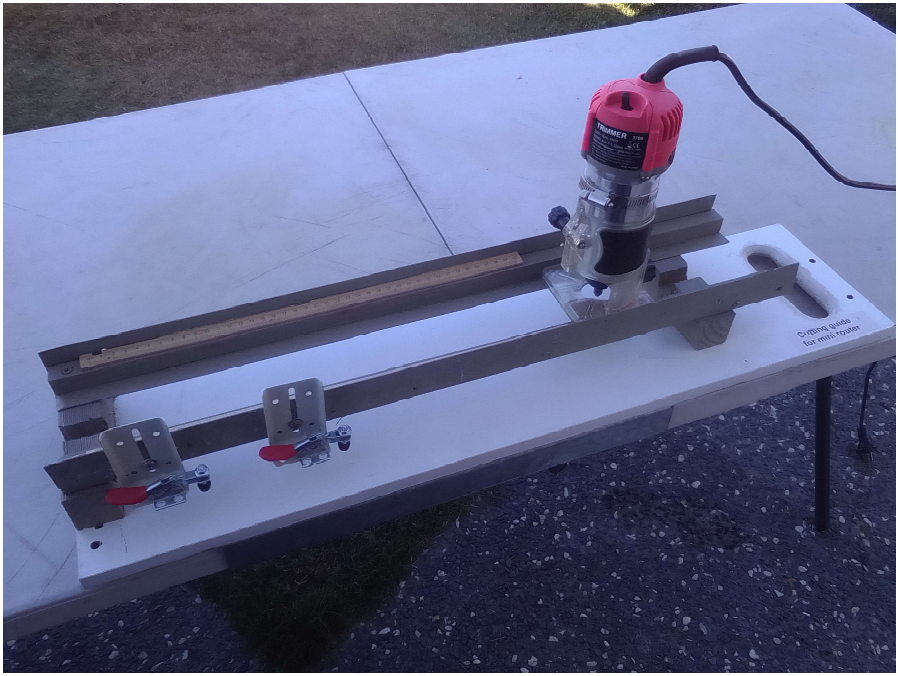
The bench for this router has been modified to be free-standing and has an extended extra-wide bench-top with mitre-tracks in each side

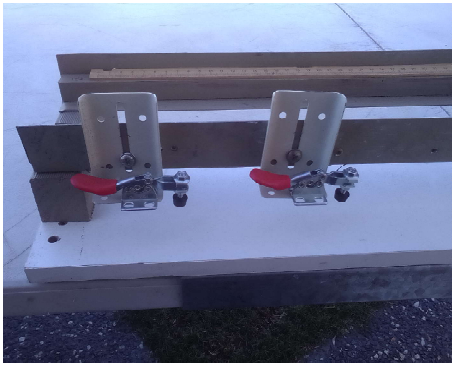
It has a toolbox beneath for storing router-bits and other attachments.

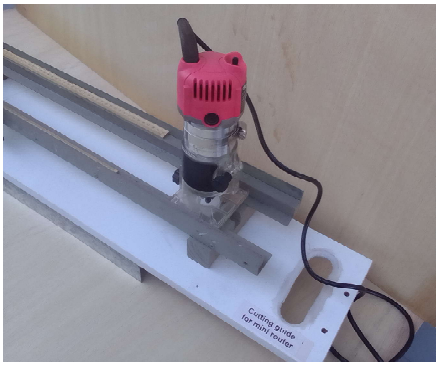


Mini Router Cutting Jig

This benchtop guide incorporates a ruler and has adjustable clamps to hold the workpiece and silicone-lubricated aluminium tracks to guide the router.







Tubing/Pipe cutting guide

This clamp-on bench-top guide has a selection of channels to hold different diameter pipes or tubing for cutting or shaping various workpieces.

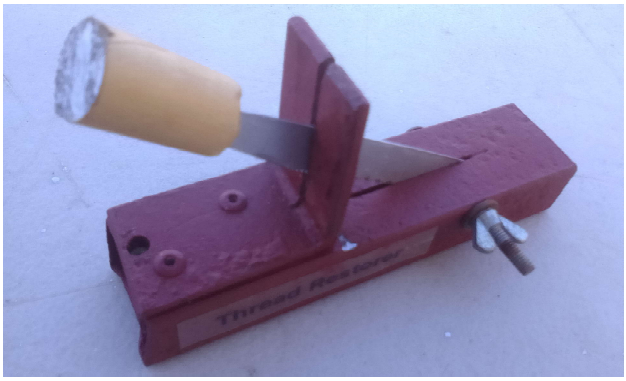
Sanding Disk Holder

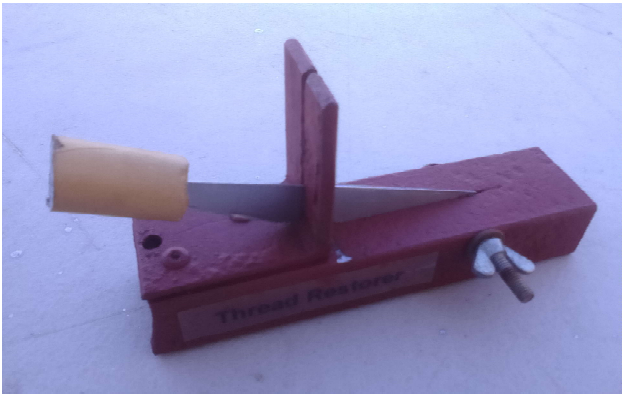
This wooden holder not only stores sanding disks flat, the alignment pins make possible attaching the disks quickly and accurately, simply by pressing the sander onto the holder to pick up the next disk.

Thread Restorer

Turning a burred thread under the blade on this thread restorer cleans the thread very quickly.

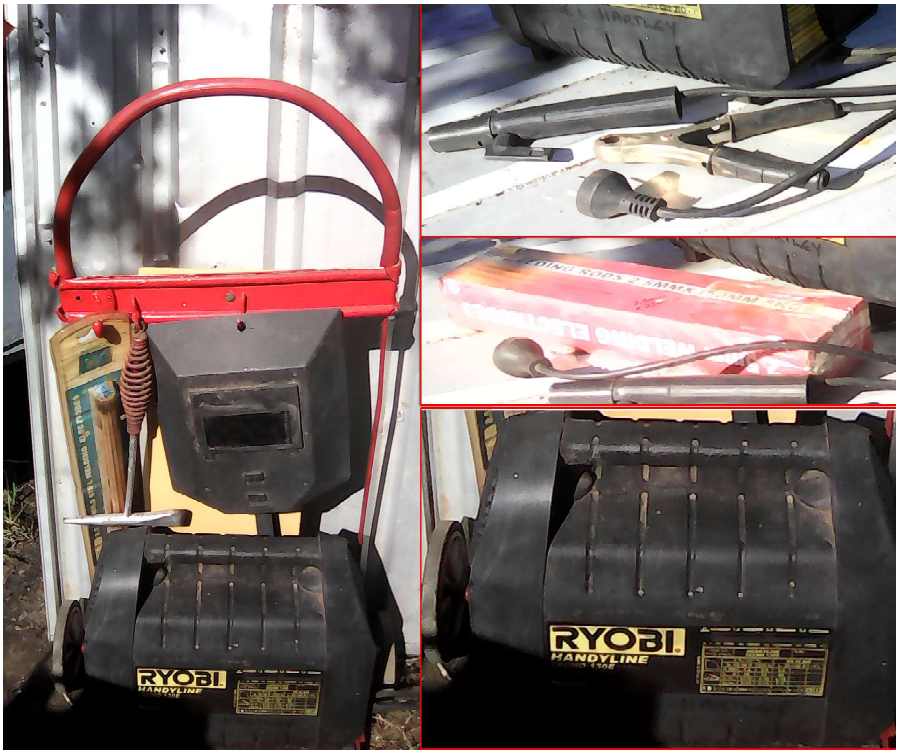
It is made from a hacksaw blade, a wooden handle and some offcuts of steel bolted together.



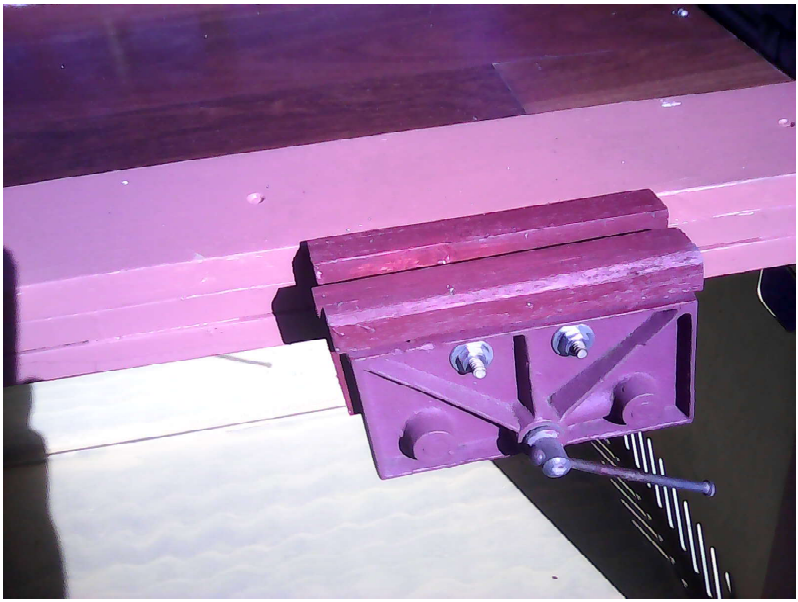


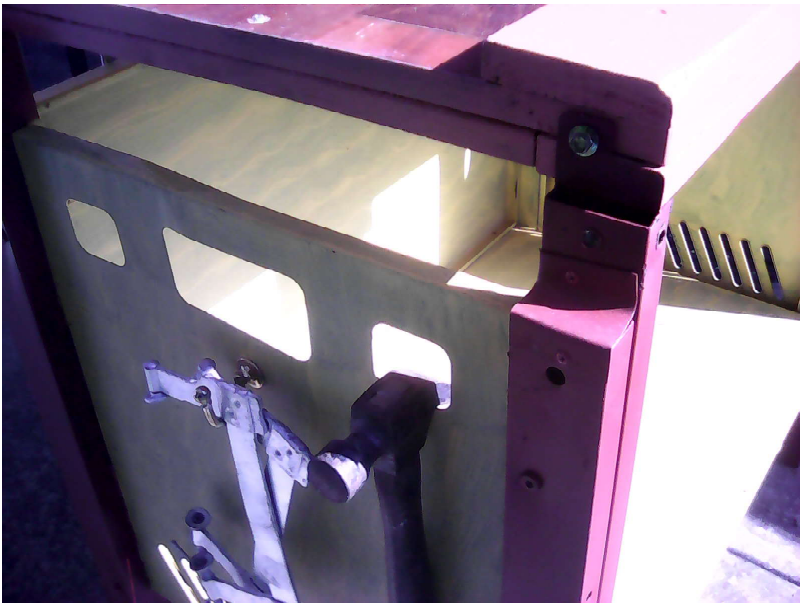
Welder Trolley

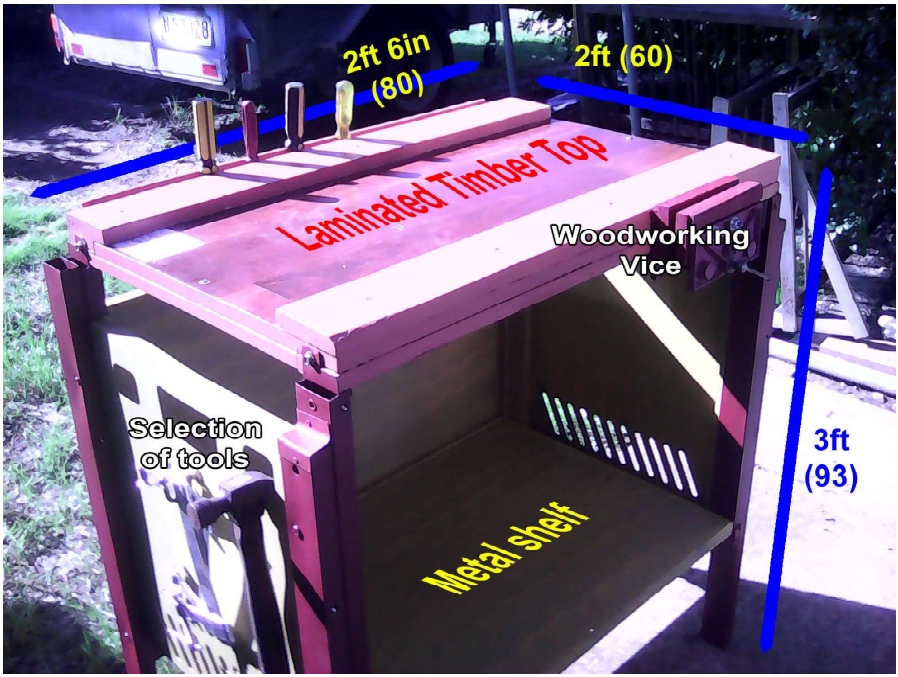
This handy trolley carries a portable electric arc welder and all associated tools (magnetic clamps, chipping hammer, welding facemask and a selection of welding rods).

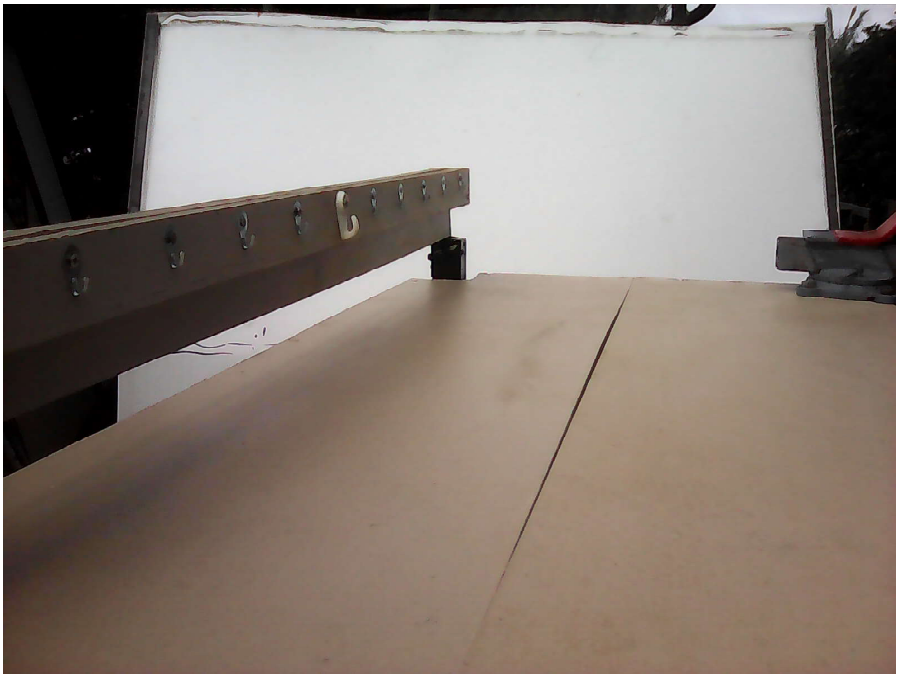


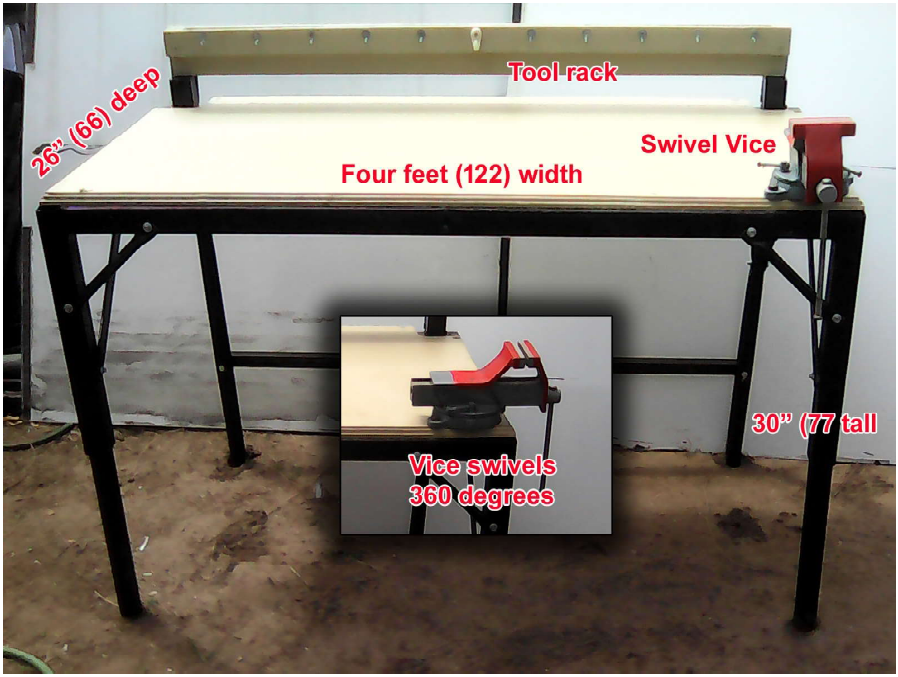
Compact Workbenches



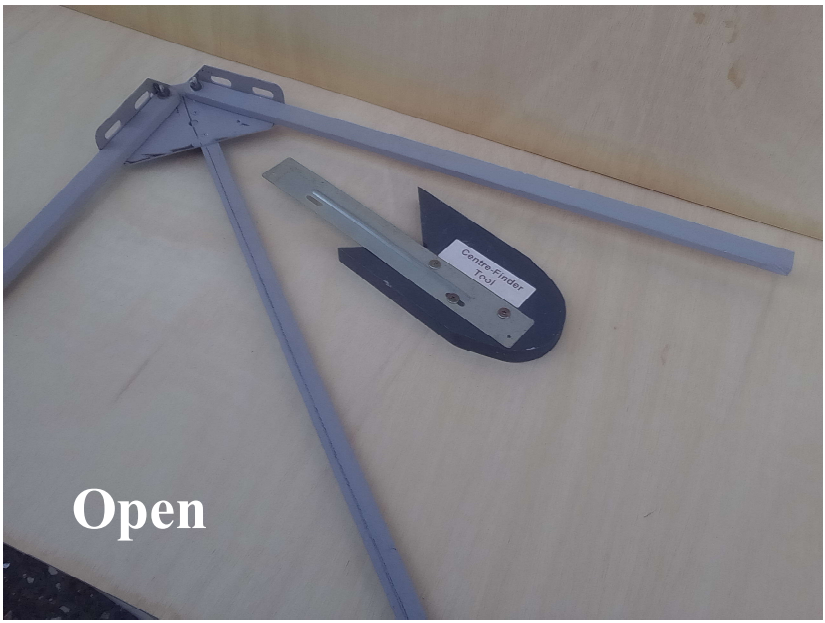



2ft 6in
(80)
2ft (60)
Laminated Timber Top
Woodworking
Vice
Selection
of tools
3ft
(93)
Metal shelf




Tool rack
26" (66) deep
Swivel Vice
Four feet (122) width
30" (77 tall
Vice swivels
360 degrees

Centre Finders



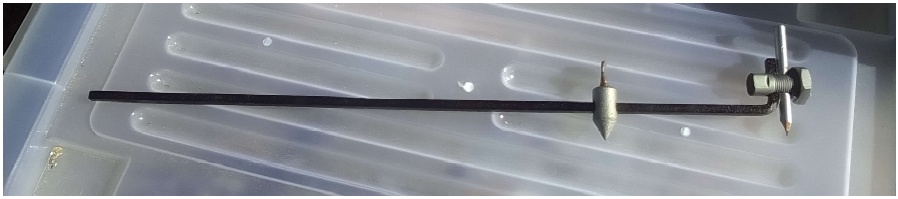
Centre Finder
Top

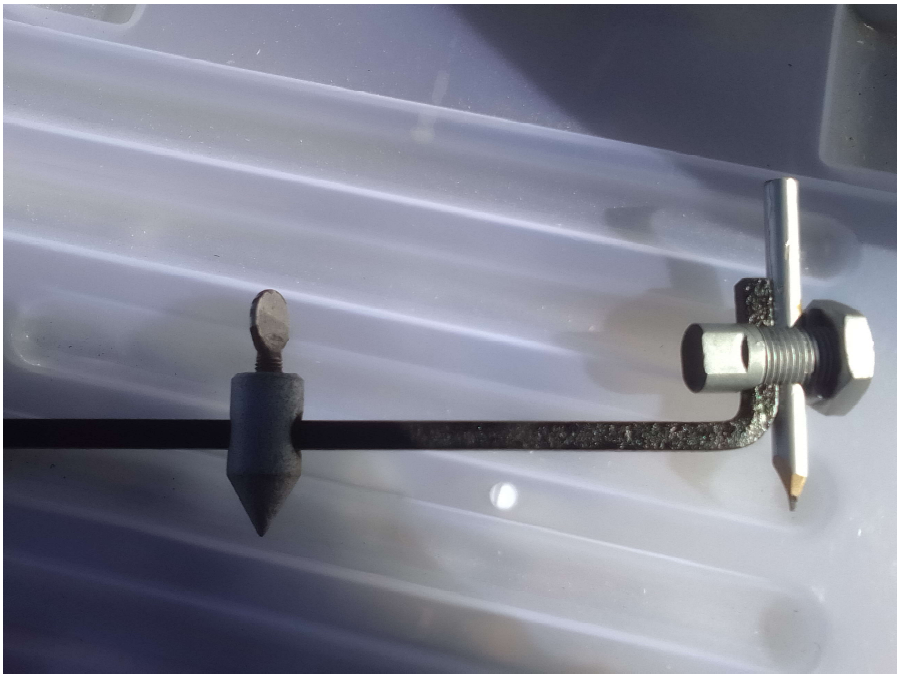
Underside

Circle Cutter for Glass

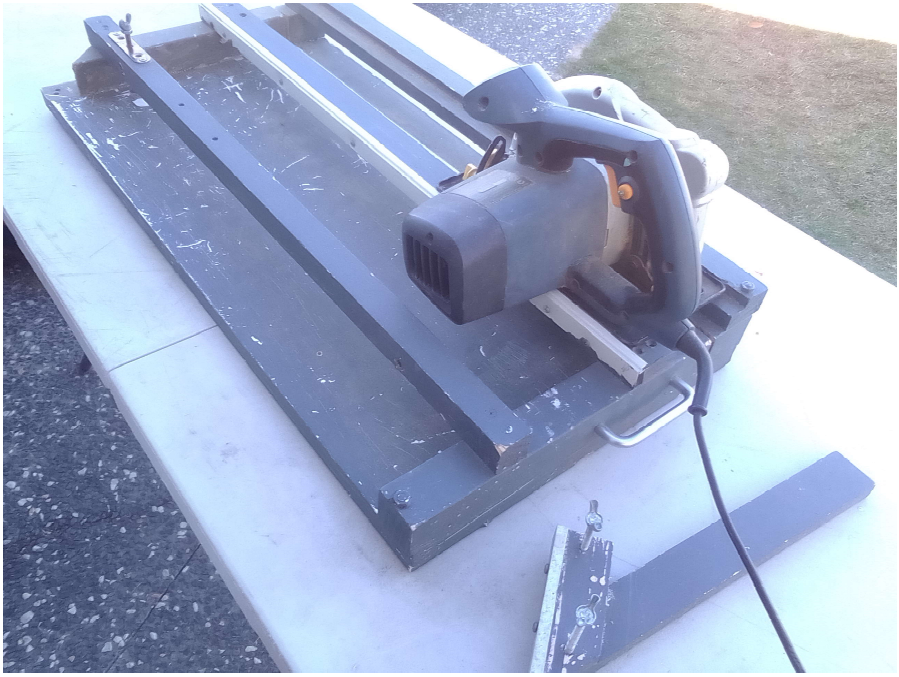
Uses a pencil as a compass or a glass cutting tool as a circle cutter.

Uses a rubber suction cup (not shown) to cut glass circles on glass up to a 30 inch radius

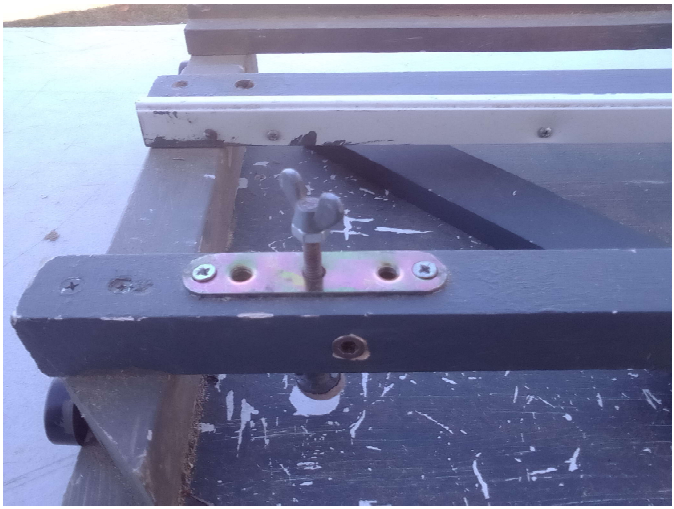




Circular Saw Guide

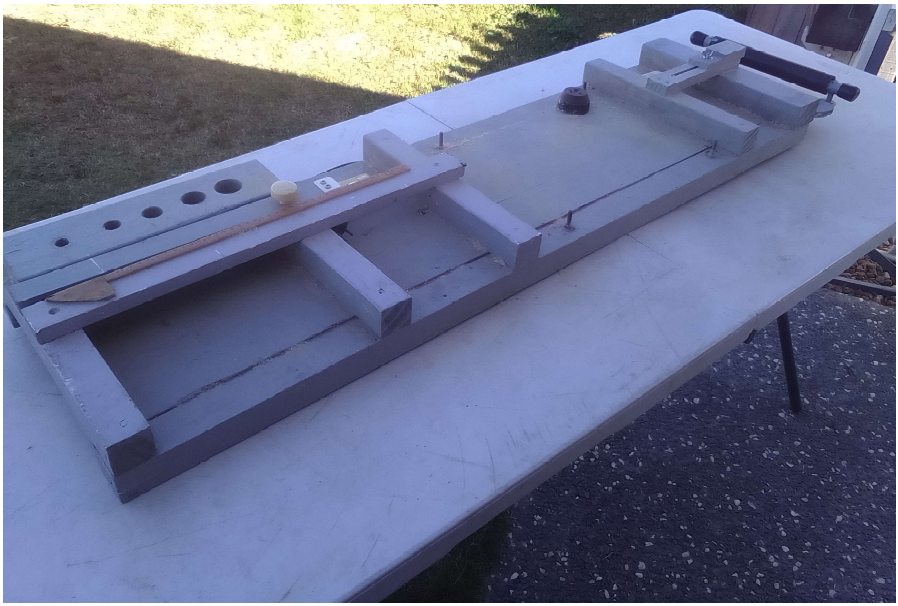


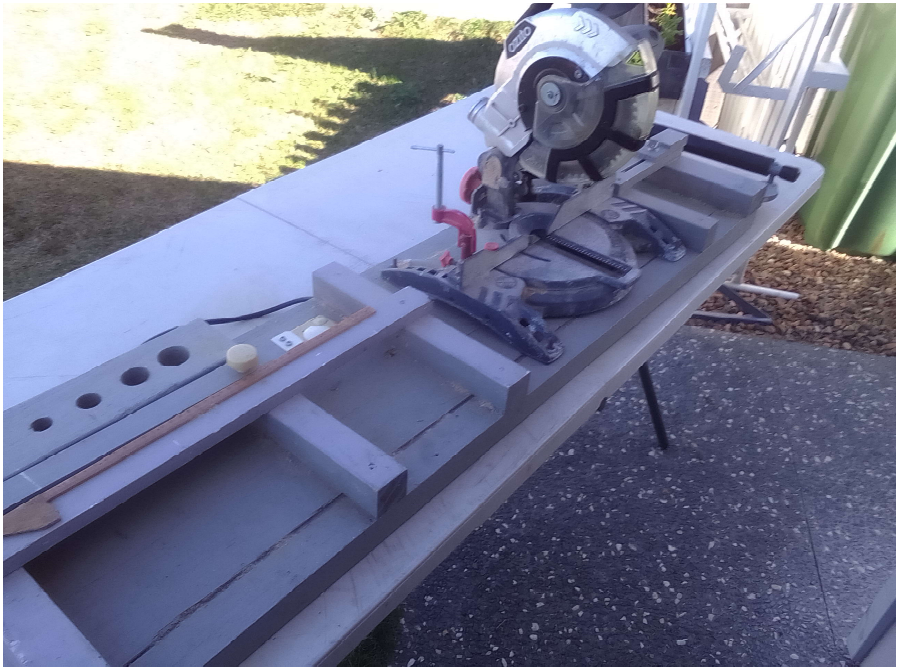
Screw clamp to hold workpiece in place.

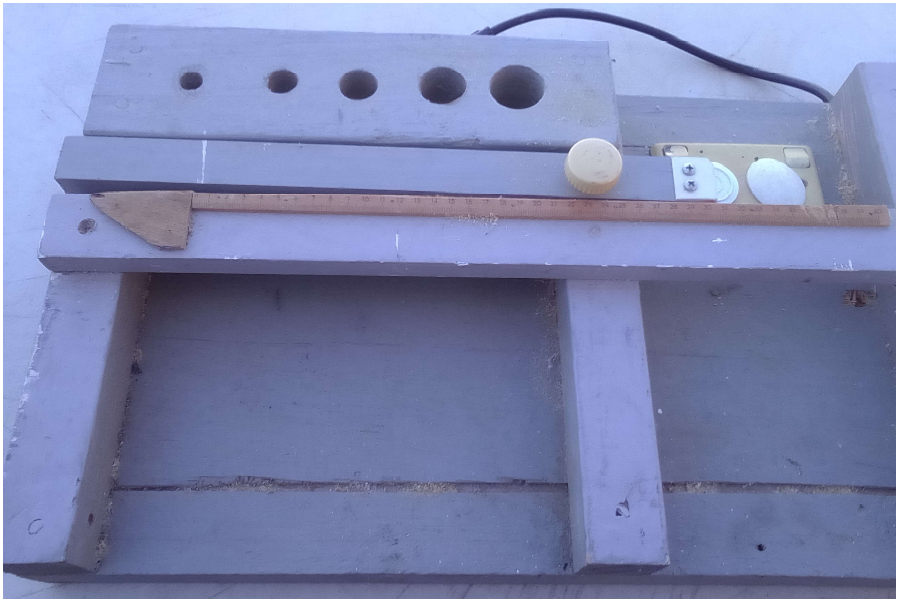


45° angle guide bolts under track

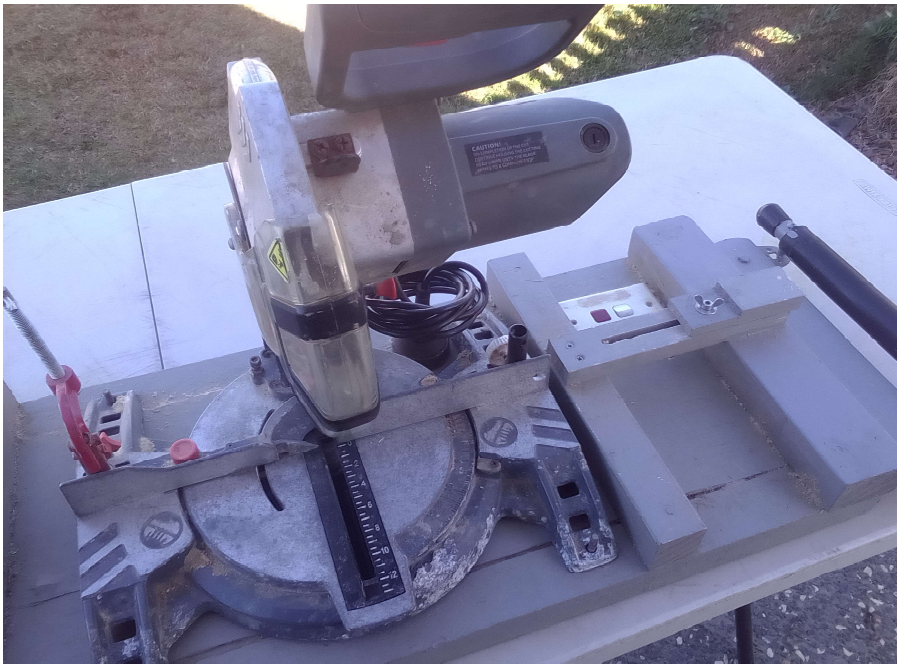
Mitre Saw Workbench





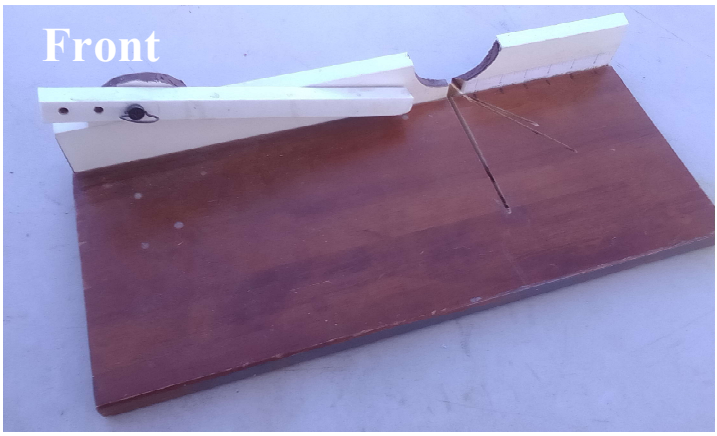


Powerpoints, Rollers, Ruler, Stop guides, etc.

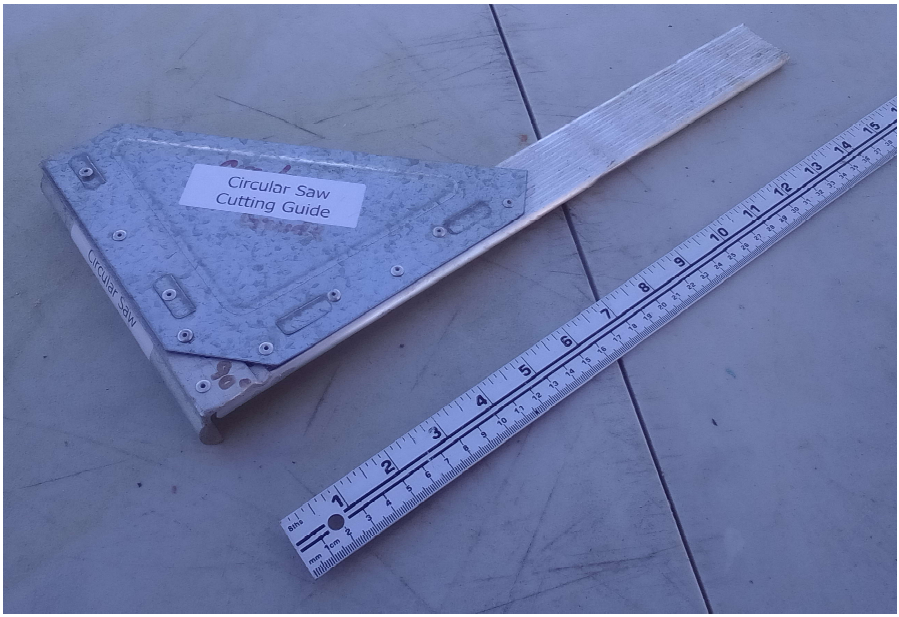


Zero Tolerance Cutting Guide

With clamp for cutting tiny items with a mitre saw



Right-angle Circular-Saw Cutting Guide



Parallel Marking Gauge & Drilling Guide

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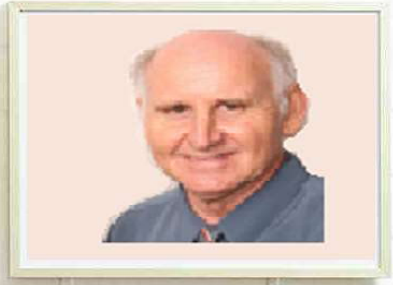
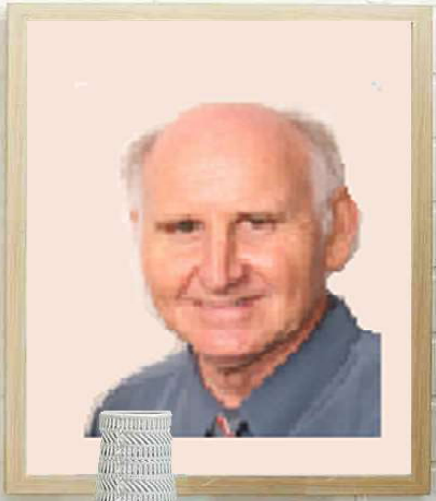
The Versatility of Creativity





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